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National Energy Board

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Reasons for Decision

TransCanada PipeLines
Limited

GH-3-96



November 1996

Facilities



File: 3200-T001-13
6 December 1996.

**National Energy Board
Reasons for Decision
GH-3-96**

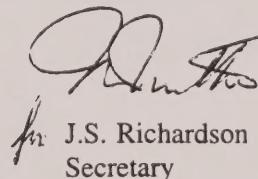
**In the matter of
TransCanada PipeLines Limited's
Application dated 3 April 1996, as amended,
pursuant to Part III of the *National Energy Board Act*
for 1997 and 1998 Facilities**

ERRATUM

On page 30 of the Reasons for Decision, please replace the second sentence in the third paragraph of *Views of the Board* with the following:

"The Board directs TransCanada to develop, by no later than March 1, 1997, a monitoring and reporting mechanism which will enable parties to better understand how capacity is allocated on TransCanada's system and how this relates to theoretical capacity."

NATIONAL ENERGY BOARD



J.S. Richardson
Secretary



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National Energy Board

Reasons for Decision

In the Matter of

TransCanada PipeLines Limited

Application dated 3 April 1996, as amended,
for 1997 and 1998 Facilities

GH-3-96

November 1996

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represented by the National Energy Board

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Abbreviations

$10^3 \text{m}^3/\text{d}$	thousand cubic metres per day
10^6m^3	million cubic metres
10^9m^3	billion cubic metres
ACS	American Crystal Sugar Company
Act	<i>National Energy Board Act</i>
Algonquin	Algonquin Gas Transmission Company
AOOC	annual owning and operating cost
Bcf	billion cubic feet
Beau Canada	Beau Canada Exploration Ltd.
Board, NEB	National Energy Board
Boston Edison	Boston Edison-Company
CAPP	Canadian Association of Petroleum Producers
CDA	Central Delivery Area
CEAA	<i>Canadian Environmental Assessment Act</i>
Centra Manitoba	Centra Gas Manitoba Inc.
Centra Ontario	Centra Gas Ontario Inc.
Certificate GC-87	Governor in Council Certificate of Public Convenience and Necessity issued in accordance with the Board's decision regarding the GH-2-94 proceeding
CNRL	Canadian Natural Resources Ltd.
CO ₂	carbon dioxide
Coastal	Coastal Gas Marketing Company
Commercial Alcohols	Commercial Alcohols Inc.
Consolidated Edison	Consolidated Edison Company of New York, Inc.

Consumers'	The Consumers' Gas Company Ltd.
dBA	decibel(s)
DCL	District Cutting License
DFO	Department of Fisheries and Oceans
Eagle	Eagle Gas Marketing, LLC.
ECTR	Enron Capital & Trade Resources Corp.
EDA	Eastern Delivery Area
Empire	Empire State Pipeline Company
Enron	Enron Capital & Trade Resources Canada Corp.
EUB	Alberta Energy and Utilities Board
FST	Firm Service Tendered
FT	Firm Transportation
GH-2-94	Hearing Order GH-2-94 in respect of TransCanada Facilities for 1995 and 1996
GH-3-95	Hearing Order GH-3-95 in respect of TransCanada Facilities for 1996 and 1997
GHW-1-96	Hearing Order GHW-1-96 in respect of various applications for natural gas export licences
GMi	Gaz Métropolitain, inc.
GPUAR	<i>Gas Pipeline Uniform Accounting Regulations</i>
Great Lakes	Great Lakes Gas Transmission Company Limited Partnership
Great Plains	Great Plains Natural Gas Company
Havre	Havre Pipeline Company, LLC
Iroquois	Iroquois Gas Transmission System, L.P.
Iroquois Energy	Iroquois Energy Brokers, LLC
Jordan	Jordan Petroleum Ltd.
km	kilometre(s)

LDCs	local distribution companies
Liquid Carbonic m	Liquid Carbonic Inc. metre(s)
Many Islands	Many Islands Pipe Lines (Canada) Limited
MLV	main line valve
mm	millimetre(s)
MMcfd	million cubic feet per day
Mobil	Mobil Corporation
MOEE	Ontario Ministry of Environment and Energy
Morrison	Morrison Petroleums Ltd.
Mr. Leroux	417 Auto Wreckers Limited
MW	megawatts
National Fuel	National Fuel Gas Supply Corporation
Northstar	Northstar Energy Corporation
NOVA	NOVA Gas Transmission Ltd.
NO _x	oxides of nitrogen
NTS	National Topographic Service
OMNR	Ontario Ministry of Natural Resources
OPCC	Ontario Pipeline Coordination Committee
PanCanadian	PanCanadian Petroleum Limited
PanEnergy	PanEnergy Marketing, a Division of PanEnergy Services Canada Ltd.
PanEnergy Marketing	PanEnergy Marketing Limited Partnership
Pinnacle	Pinnacle Resources Ltd.
PJs	petajoules
PPBR	plans, profiles and books of reference

ProGas	ProGas Limited
ProGas U.S.A.	ProGas U.S.A., Inc.
ProGold	ProGold Limited Liability Company
PTMS	PanEnergy Trading and Marketing Services, LLC
Ranger	Ranger Oil Limited
REI	Renaissance Energy (U.S.) Inc.
Renaissance	Renaissance Energy Ltd.
Rio Alto	Rio Alto Exploration Ltd.
Rockland	Rockland Pipeline Company
Rogers Sugar	Winnipeg Division of Rogers Sugar Ltd.
SCC	Stress Corrosion Cracking
Simplot	Simplot Canada Limited
Sproule	Sproule Associates Limited
SSMDA	Sault Ste. Marie Delivery Area
Tcf	trillion cubic feet
TransCanada	TransCanada PipeLines Limited
Transco	Transcontinental Gas Pipe Line Corporation
TransGas	TransGas Limited
UMC	UMC Petroleum Corporation
Union	Union Gas Limited
U.S.	United States of America
US Gypsum	United States Gypsum Company
Viking	Viking Gas Transmission Company
WCSB	Western Canada Sedimentary Basin

Recital and Appearances

IN THE MATTER OF the *National Energy Board Act* ("the Act") and the Regulations made thereunder; and

IN THE MATTER OF an application dated 3 April 1996, as amended 2 August 1996, by TransCanada PipeLines Limited ("TransCanada") for a Certificate of Public Convenience and Necessity and for certain orders respecting the construction of additional facilities on its mainline; and

IN THE MATTER OF an application dated 14 May 1996 by Renaissance Energy Ltd. ("Renaissance") for orders of the National Energy Board ("the Board" or "NEB") pursuant to subsections 71(2) and 71(3) of the Act;

IN THE MATTER OF an application dated 3 October 1996, as amended 9 October 1996, by TransCanada for the exemption of certain facilities from the provisions of certain certificate conditions; and,

IN THE MATTER OF the National Energy Board Hearing Order GH-3-96;

HEARD at Winnipeg, Manitoba, 7, 8, 9 and 10 of October 1996.

BEFORE:

J.A. Snider	Presiding Member
K.W. Vollman	Member
A. Côté-Verhaaf	Member

APPEARANCES:

P.R. Jeffrey	TransCanada PipeLines Limited
A.C. Reid	
D.G. Davies	Renaissance Energy Ltd.
N.J. Schultz	Canadian Association of Petroleum Producers
R. Fraser	Amoco Canada Petroleum Company Ltd.
L.G. Keough	Coastal Gas Marketing Company and Enron Capital & Trade Resources Canada
H.T. Soudek	The Consumers' Gas Company Ltd.
F.X. Berkemeier	Consumers Power Company
N. Gretener	Eagle Gas Marketing, LLC and Simplot Canada Limited
D. Gauthier	On His Own Behalf

C. Yadav	PanCanadian Petroleum Ltd.
S.C. Carscallen, Q.C.	PanEnergy Marketing Limited Partnership
C.B. Woods	
M.A.K. Muir	ProGas Limited
F.G. Hébert	Société en commandite Gaz Métropolitain
G. Cameron	Union Gas Limited and Centra Gas Ontario Inc.
J. Page	Alberta Department of Energy
J.C. Turchin	Ministry of Environment and Energy for Ontario
C. Beauchemin	Board Counsel

Overview

(Note: This overview is provided solely for the convenience of the reader and does not constitute part of this Decision or the Reasons, to which readers are referred for detailed text and tables.)

TransCanada's Facilities Application

By application dated 3 April 1996, as amended 2 August 1996, TransCanada applied for a Certificate of Public Convenience and Necessity, pursuant to Part III of the Act, for authorization to construct facilities on its natural gas pipeline system in Saskatchewan, Manitoba and Ontario. Approval was sought to construct a total of 205.5 km of pipeline looping, 350 megawatts ("MW") of compression, aftercoolers, manifolding and other compressor related items at a total cost of \$897 million (\$1996). Construction of 138 km of the pipeline looping was proposed for the winter of 1996-97, the remainder for the following summer.

TransCanada's Exemption Application

By application dated 3 October 1996, as amended 9 October 1996, TransCanada applied for exemption of certain facilities, including certain base case requirements and the Winter Loop facilities, from the Release Conditions which require TransCanada to demonstrate that all required U.S. and Canadian federal regulatory approvals, including applicable long-term Canadian export authorizations, have been granted, that all transportation and supply contracts have been executed, and that updated requirements tables and flow schematics are submitted for Board approval. TransCanada also applied for an extension to the sunset clause for the Richmond Loop (MLV 1216 to MLV 1216 + 10.3 km) on the North Bay Short Cut, approved under Certificate GC-87 but not yet constructed.

Renaissance's Section 71 Application

By application dated 14 May 1996, Renaissance applied to the Board pursuant to subsections 71(2) and 71(3) of the Act for access to TransCanada's system, and for the Board to order TransCanada to construct the facilities, if required, for the shipment of $145 \text{ } 10^3 \text{ m}^3/\text{d}$ (5.1 MMcf/d) of gas from Empress, Alberta to Emerson, Manitoba. This application was heard by the Board as part of the GH-3-96 proceeding in view of Renaissance's indicated requirement for service on TransCanada's system by 1 September 1997.

Highlights of the Board's Decision

In respect of TransCanada's application pursuant to sections 52 and 58 of the Act, the Board is satisfied that the applied-for facilities are required by the present and future public convenience and necessity and is prepared to issue a certificate subject to the approval of the Governor in Council. The Board determined that the proposed expansion was economically feasible, given that there was a strong likelihood that the facilities would be used at a reasonable level over their economic life and that the demand charges would be paid. The Board's certificate will include conditions to ensure that only those facilities needed to meet the aggregate firm service requirements will be built, including facilities to restore the system design capability, and that construction will occur in an acceptable technical and environmental manner.

In respect of Renaissance's application pursuant to section 71 of the Act, the Board has decided to grant Renaissance's request for access to TransCanada's facilities. In reaching its decision, the Board considered such factors as: the uniqueness of Renaissance's request; TransCanada would not be required to build any additional facilities for 1997-98; CAPP supported Renaissance's application; and no party, other than TransCanada, argued against the application.

Chapter 1

Introduction

1.1 TransCanada's Facilities Application

By application dated 3 April 1996, as amended 2 August 1996, TransCanada applied for a Certificate of Public Convenience and Necessity, pursuant to Part III of the Act, for authorization to construct facilities on its natural gas pipeline system in Saskatchewan, Manitoba and Ontario. TransCanada indicated that the proposed expansion would enable it to:

- (a) meet projected requirements under existing contracts and the new contracts underpinning TransCanada's Release Application,¹ filed in February 1996;
- (b) provide a total of $8\ 118\ 10^3\text{m}^3/\text{d}$ (286.7 MMcf/d) of new Firm Transportation ("FT") from Empress, of which $3\ 342\ 10^3\text{m}^3/\text{d}$ (118.1 MMcf/d) or 41 percent would be for domestic customers in Manitoba and Ontario and the remaining $4\ 776\ 10^3\text{m}^3/\text{d}$ (168.6 MMcf/d) or 59 percent would be for export customers; and
- (c) restore the system design capability following revisions to simulation data resulting in an average reduction of $850\ 10^3\text{m}^3/\text{d}$ (30 MMcf/d) in summer seasonal capability on the Western Section, an average reduction of $1\ 501\ 10^3\text{m}^3/\text{d}$ (53 MMcf/d) in summer seasonal capability on the Central Section, and a reduction of $312\ 10^3\text{m}^3/\text{d}$ (11 MMcf/d) in winter peak day capability, with loss of most critical unit, on the North Bay Shortcut.

Approval was sought to construct a total of 205.5 km of pipeline looping, 350 MW of compression, aftercoolers, manifolding and other compressor related items at a total cost of \$897 million (\$1996). These facilities consist of: 169.8 MW of new compression at five stations and aftercoolers at one station on the Western Section; 189.4 km of loop, 169.8 MW of new compression at six stations, aftercoolers at two stations and manifolding at five compressor stations on the Central Section; 16.1 km of loop on the North Bay Shortcut; 10.4 MW of new compression at one station on the Kirkwall/Niagara Line; and, compressor modifications, standby plants and new aero assemblies. Construction of the applied-for facilities is planned for 1997 with 138 km of the pipeline looping proposed for the 1996-97 winter construction season.

TransCanada estimated that the addition of the proposed facilities to its system would result in an increase in the Eastern Zone toll to 93.6 cents per gigajoule ("GJ") in 1999, 1.5 cents higher than the toll for the base case, without the new services and proposed facilities.

¹ TransCanada's February 1996 Release Application sought release from the requirements of Conditions 13 and 14 of Certificate GC-87 for certain facilities and from Conditions 12 and 13 of Certificate GC-90 for certain other facilities. These conditions are referred to as the "Release Conditions".

1.2 TransCanada's Exemption Application

By application dated 3 October 1996, as amended 9 October 1996, TransCanada applied for exemption of certain facilities, including certain base case requirements and the Winter Loop facilities, from those certificate conditions referred to as "Release Conditions" which require TransCanada to demonstrate that all required U.S. and Canadian federal regulatory approvals including applicable long-term Canadian export authorizations have been granted, that all transportation and supply contracts have been executed, and that updated requirements tables and flow schematics are submitted for Board approval. Also in the Exemption Application, TransCanada applied for an extension to the sunset clause¹ for the Richmond Loop (MLV 1216 to MLV 1216 + 10.3 km) on the North Bay Short Cut, approved under Certificate GC-87 but not constructed. The Richmond Loop was included in TransCanada's 1997-98 Facilities Application in its base case requirements.

1.3 Renaissance's Section 71 Application

By application dated 14 May 1996, Renaissance applied to the Board, pursuant to subsections 71(3) and 71(2) of the NEB Act for orders of the Board requiring TransCanada:

- (a) to provide adequate and suitable facilities for Renaissance to transport up to $145.0 \text{ } 10^3 \text{m}^3/\text{d}$ (5.1 MMcf/d) from Empress, Alberta to Emerson, Manitoba, commencing 1 September 1997; and
- (b) to receive, transport, and deliver gas offered by Renaissance to TransCanada.

Renaissance's original request to TransCanada, dated 30 November 1995, for a ten-year term was not included in TransCanada's 1997-98 Facilities Application because TransCanada was not satisfied that Renaissance had demonstrated the existence of both long-term downstream take-away arrangements and markets. TransCanada was concerned that the Board might place it at risk for lost revenues due to any failure by Renaissance to access downstream transportation.

Renaissance and Rogers Sugar Ltd. ("Rogers Sugar") have entered into an amended five-year gas supply agreement commencing 1 September 1997. Renaissance submitted that the gas will be used by the Winnipeg Division of Rogers Sugar to process sugar beets for about five or six months out of the year (September to February). During the remaining months Renaissance hopes to utilize the TransCanada firm service capacity to deliver gas to Emerson, Manitoba to supply short-term export markets. Renaissance has entered into a gas supply arrangement with its subsidiary, Renaissance Energy (U.S.) Inc. ("REI"), from 1 November 1997 to 31 October 2007 to supply $145 \text{ } 10^3 \text{m}^3/\text{d}$ (5.1 MMcf/d) of gas.

Renaissance submitted that it would be appropriate for the Board to consider its application in TransCanada's 1997-98 Facilities Application. By letter dated 23 May 1996, after examining Renaissance's request, the Board decided to refer Renaissance's section 71 application to the GH-3-96 proceeding.

¹ The sunset clause is a condition in a certificate or order that causes the certificate or order to expire by a certain date should construction or installation of those facilities not have commenced by that date.

1.4 PanCanadian's Section 71 Application

By application dated 15 August 1996, PanCanadian Petroleum Limited ("PanCanadian") applied to the Board, pursuant to subsections 71(3) and 71(2) of the NEB Act, for orders of the Board requiring TransCanada:

- (a) to provide adequate and suitable facilities for PanCanadian to transport up to 1 409 10³m³/d (49.7 MMcf/d) from Empress, Alberta to Niagara Falls, Ontario, commencing 1 November 1997; and
- (b) to receive, transport, and deliver gas offered by PanCanadian to TransCanada.

PanCanadian stated that it believed that TransCanada was reluctant to advance its application due to the present wording of TransCanada's Queuing Procedures and the filing guidelines published by the Board. PanCanadian submitted that the overall aim in the evolution over the last ten years of TransCanada's Queuing Procedures was to improve access to markets while at the same time provide reasonable assurance that TransCanada's demand charges would be paid. PanCanadian believed that it supplied the necessary evidence proving adequate long-term supply capability, a ten-year term market, as well as interruptible transportation capacity.

By letter dated 22 August 1996, after examining PanCanadian's request for approval, the Board decided to refer PanCanadian's section 71 application to the GH-3-96 proceeding. Subsequently, on 24 September 1996, PanCanadian withdrew its application stating that, since the filing of the application, PanCanadian has continued to communicate with TransCanada in order to find a way to accommodate its need for service and to better understand the process employed by TransCanada which resulted in the denial of PanCanadian's request for service. Although these discussions had not resolved all of PanCanadian's concerns, PanCanadian was of the view that the parties would be able to reach a resolution or understanding without the need for regulatory involvement.

1.5 Other Matters

Two parties, 417 Auto Wreckers Limited and PanEnergy Marketing Limited Partnership, requested revisions to the issues in the GH-3-96 proceeding. The List of Issues for the GH-3-96 proceeding is included in Appendix I.

1.5.1 417 Auto Wreckers Limited

In support of his request for intervenor status in the GH-3-96 proceeding, 417 Auto Wreckers Limited ("Mr. Leroux"), by letter dated 16 September 1996, indicated that he intended to appear at the hearing and proposed to question TransCanada on several issues listed in his letter. By letter dated 20 September 1996, the Board advised Mr. Leroux that he had been granted intervenor status. The Board further advised Mr. Leroux that only matters relevant to the GH-3-96 proceeding would be heard and that certain of the issues that Mr. Leroux intended to pursue were not found to be relevant to the proceeding. By letter dated 23 September 1996, Mr. Leroux submitted a revised list of issues and stated that the Board was not allowing him to address issues relevant to landowners affected by TransCanada's expansion program. By letter dated 1 October 1996, the Board advised Mr. Leroux that, in order to allow parties an opportunity to comment on the inclusion of any proposed revisions to the issues, the Board had decided to hear argument on this as a preliminary matter at the hearing.

Mr. Leroux, subsequently, did not appear at the hearing, which commenced on 7 October 1996 in Winnipeg, Manitoba.

1.5.2 PanEnergy Marketing Limited Partnership

By letter dated 19 September 1996, PanEnergy Marketing Limited Partnership ("PanEnergy Marketing") requested an amendment to Issue 8 of the List of Issues to include the obligation of TransCanada to commence the construction and installation of each of the additional facilities certified by the Board in accordance with the construction schedules set forth in TransCanada's application. However, by letter dated 1 October 1996 PanEnergy Marketing advised the Board that it was withdrawing its request.

1.6 Environmental Screening

The Board conducted an environmental screening of the applied-for facilities in compliance with section 18 of the *Canadian Environmental Assessment Act* ("CEAA"). The Board ensured that there was no duplication in the requirements under the CEAA and the Board's own regulatory process.

Chapter 2

Overall Gas Supply/Demand

2.1 Overall Gas Supply

TransCanada relied upon two studies prepared by Sproule Associates Limited ("Sproule") entitled *The Future Natural Gas Supply Capability for the Province of Alberta and the Western Canada Sedimentary Basin 1995 - 2017*, dated May 1996, and *Province of Alberta Enhancement to the TCPL Supply Capability Model and the Pool Size Distribution Study*, dated April 1994, as evidence of overall gas supply.

The supply capability is based on factors such as demand, price, cost, gas available from existing pools and gas expected to be available from reserves additions, all of which are used to determine productive capacity and returns on investments to the upstream sector.

Sproule concluded that Alberta represents approximately 80 percent of the Western Canadian gas supply and could achieve annual productive capacity, from conventional sources, of $164 \text{ } 10^9 \text{ m}^3$ (5.8 Tcf) by 2012 after which production is forecast to decline. Sproule extrapolated the analysis to $195 \text{ } 10^9 \text{ m}^3$ (6.9 Tcf) for the Western Canada Sedimentary Basin ("WCSB").

The analysis for conventional resources in Alberta identifies a supply/demand cross-over in 2014 with a deficit in annual productive capacity relative to demand of $8.5 \text{ } 10^9 \text{ m}^3$ (0.3 Tcf) in the year 2017 at the end of the forecast period. Sproule's "high technology" sensitivity analysis reported no deficit in productive capacity by 2017. Sproule's "unconnected" sensitivity analysis showed a supply/demand cross-over in 2013 and a deficit in annual productive capacity relative to demand of $19.5 \text{ } 10^9 \text{ m}^3$ (0.7 Tcf) in the year 2017. Sproule expects coalbed methane to be an economic alternative source of natural gas supply within 10 to 15 years.

No intervenor expressed concern over Sproule's estimate of supply capability.

Views of the Board

While the forecasting of supply capability is an inherently uncertain task with the range of results presented through the use of sensitivity analyses, the Board is satisfied that TransCanada has demonstrated that there will be sufficient overall gas supply to ensure adequate utilization of TransCanada's system, including the proposed facilities. Sproule provided an insightful and thorough discussion of the impact of technology on the natural gas industry in this report and has described unconventional gas as a potential source to supplement conventional WCSB gas. In future applications, the Board would be interested in seeing unconventional supply integrated into the supply capability model.

2.2 Long-term Domestic Markets

TransCanada projected that gas demand in Eastern Canada (Manitoba, Ontario and Québec) will grow at an average annual rate of 2.1 percent over the forecast period, increasing from 1 270 petajoules ("PJs") in 1994 to 1 762 PJs in 2010. TransCanada estimated that gas demand in Ontario and Québec will exceed contracted pipeline requirements by some $7.3 \cdot 10^9 \text{ m}^3$ (256 Bcf) in 2005. TransCanada's evidence indicated that the gap continues to grow between currently-contracted capacity on the TransCanada system into the Ontario and Québec markets and that the projected requirements in those markets will require additional facilities beyond those applied for and/or additional U.S. gas imports.

Views of the Board

The Board believes TransCanada's forecast of gas demand for Eastern Canada to be reasonable. The Board notes that no party either challenged TransCanada's forecast, or questioned TransCanada's ability to compete with other gas pipelines in serving those markets.

2.3 Long-term Export Markets

To demonstrate the long-term nature of gas demand in the U.S. Midwest and U.S. Northeast export markets, TransCanada relied on the forecasts prepared by the Gas Research Institute, The WEFA Group and DRI/McGraw Hill. TransCanada noted that these forecasts indicate that annual growth rates for gas demand over the forecast period 1995 to 2010 will range between 0.51 and 0.85 percent in the U.S. Midwest, and between 0.56 and 1.53 percent in the U.S. Northeast. TransCanada concluded that these forecasts demonstrate the existence of long-term U.S. markets and, hence, the need for its transportation services.

Views of the Board

The Board is satisfied with TransCanada's evidence regarding the long-term gas demand in the U.S. Midwest and U.S. Northeast markets. The Board notes that no party challenged TransCanada's evidence regarding the ability of Canadian-sourced gas to compete with other gas supply sources in those markets. The Board believes that there is reasonable expectation that shippers will rely on the TransCanada system to meet some of the projected increase in demand in those U.S. markets.

Chapter 3

Specific Transportation Services

3.1 TransCanada's Requirements Forecast

The capacity to be provided by the applied-for facilities is primarily required to allow TransCanada to satisfy the projected requirements under existing transportation service contracts and new firm, domestic and export service requirements.

TransCanada provided forecasted contractual winter maximum daily and annual deliveries for the contract years commencing 1 November 1995, 1996, and 1997 (refer to Table 3-1). TransCanada submitted that its forecast of winter maximum daily deliveries is based upon its existing transportation service contracts and upon executed or anticipated precedent agreements with prospective shippers. TransCanada's forecast of annual deliveries is based upon survey questionnaire results and upon discussions with existing and prospective shippers. TransCanada's export forecast assumes that existing export licences and contracts will be extended beyond their current expiry dates.

Table 3-1
TransCanada's Forecast of Winter Maximum Daily and Annual Deliveries⁽¹⁾⁽²⁾

(a) Winter Maximum Daily Deliveries

Contract Year	Domestic (10 ⁶ m ³)		Export (10 ⁶ m ³)		Total (10 ⁶ m ³)	
	(MMcf)	(MMcf)	(MMcf)	(MMcf)	(MMcf)	
1995-96	103.5	3 654	99.5	3 512	203.0	7 166
1996-97	103.1	3 639	98.0	3 459	201.1	7 098
1997-98	106.0	3 742	101.2	3 572	207.2	7 314

(b) Annual Deliveries

Contract Year	Domestic (10 ⁹ m ³)		Export (10 ⁹ m ³)		Total (10 ⁹ m ³)	
	(Bcf)	(Bcf)	(Bcf)	(Bcf)	(Bcf)	
1995-96	33.5	1 183	34.0	1 200	67.5	2 383
1996-97	34.0	1 200	34.4	1 214	68.4	2 414
1997-98	35.4	1 250	35.7	1 260	71.1	2 510

⁽¹⁾ Source: TransCanada's 1996-97 Facilities Application, Tab "Requirements", Subtab 1, revised 19 July 1996.

⁽²⁾ Comprised of FT, STFT, FST, STS, WFS and TWS, but excluding all company fuel requirements, losses and other uses.

Compared to the requirements forecast filed by TransCanada in its 18 September 1995 revision to its 1996-97 Facilities Application, Hearing Order GH-3-95, TransCanada's 1996-97 base case¹ winter maximum daily deliveries increased by $801 10^3 \text{m}^3/\text{d}$ (28.3 MMcf/d) reflecting, in part, the non-renewal of contracted capacity, requested contract revisions or restructuring, and the addition of new projects. Those changes in deliveries include Coastal Gas Marketing Company's ("Coastal") $513 10^3 \text{m}^3/\text{d}$ (18.1 MMcf/d), early start-up of incremental service commencing 1 November 1996.

TransCanada indicated that its base case requirements forecast is reasonable, that the forecast will be updated as more current information becomes available, and that it will make any adjustments at the time its Release Application is filed with the Board prior to the commencement of construction.

3.2 New Domestic Services

The applied-for facilities are supported by seven domestic projects including five domestic shippers which have requested incremental service totalling $3 342 10^3 \text{m}^3/\text{d}$ (118.1 MMcf/d) or 41 percent of the total new firm services. (refer to Table 3-2).

3.2.1 Centra Gas Ontario Inc. (Sault Ste. Marie Delivery Area ("SSMDA"))

Centra Gas Ontario Inc. ("Centra Ontario") has executed a ten-year FT Service Contract with TransCanada, dated 2 October 1996, for the delivery of $235.0 10^3 \text{m}^3/\text{d}$ (8.3 MMcf/d) of gas commencing 1 November 1997. The gas will be shipped from Alberta and Saskatchewan to the point of interconnection between the pipeline facilities of TransCanada and Centra Ontario's distribution facilities near Sault Ste. Marie, Ontario.

The gas will be used to meet normal market growth in Centra Ontario's franchise area.

Upstream transportation on NOVA Gas Transmission Ltd. ("NOVA") and TransGas Limited ("TransGas") will be contracted for by Centra Ontario's suppliers. Downstream transportation will be provided by Centra Ontario.

Centra Ontario's supply portfolio, which is made up of short, medium and long-term contracts, contains some inherent flexibility to meet part of the increased demand in the SSMDA. A competitive bidding process will be used, effective 1 November 1997, to supply the remaining incremental gas requirement.

¹Base case requirements include transportation services which are currently available and those for which the facilities necessary to enable the service to commence have been certified.

Table 3-2
New Firm Service Transportation Associated with
TransCanada's 1997-98 Facilities Application

	Start Date	Delivery Point	Term (Years)	(10 ³ m ³ /d)	Volume ⁽¹⁾ (MMcfd)
Domestic					
Centra Gas Ontario Limited	1/11/97	SSMDA	10	235	8.3
Centra Gas Ontario Limited	1/11/97	EDA	10	95	3.4
Union Gas Limited	1/11/97	CDA	10	283	10.0
Commercial Alcohols Inc.	1/11/97	CDA	10	180	6.4
The Consumers' Gas Company Ltd.	1/11/97	EDA	10	708	25.0
Simplot Canada Limited	1/11/97	MDA	10	708	25.0
Union Gas Limited	1/11/97	CDA	10	1 133	40.0
				3 342	118.1
Total Domestic					
Export					
Coastal Gas Marketing Company	1/04/97	Emerson 1	10.5	513	18.1
Eagle Gas Marketing	1/11/97	Emerson 2	10	453	16.0
Renaissance Energy Ltd.	1/11/97	Niagara Falls	10	282	10.0
ProGas Limited	1/11/97	Emerson	10	160	5.6
U.S. Gypsum Company	1/11/97	Emerson	10	382	13.5
Renaissance Energy Ltd.	1/11/97	Emerson	10	91	3.2
Coastal Gas Marketing Canada	1/11/97	Iroquois	10	397	14.0
ProGas Limited	1/11/97	Iroquois	10	310	10.9
Coastal Gas Marketing Canada	1/11/97	Chippawa	10	1365	48.2
Enton Capital & Trade	1/11/97	Niagara	10	436	15.4
Resources Canada Corp.					
PanEnergy Marketing	1/11/97	Niagara	10	247	8.7
Ranger Oil Limited	1/11/97	Niagara	10	142	5.0
				4 776	168.6
Total Export					
Total Domestic and Export					
				8 118	286.7

(1) Commencement Date and Volume in accordance with the Precedent Agreements between TransCanada and the shippers.

3.2.2 Centra Gas Ontario Inc. (Eastern Delivery Area ("EDA"))

Centra Ontario has executed a ten-year FT Service Contract with TransCanada, dated 2 October 1996, for the delivery of 95.0 $10^3 \text{m}^3/\text{d}$ (3.4 MMcf/d) of gas commencing 1 November 1997. The gas will be shipped from Alberta and Saskatchewan to the point of interconnection between the pipeline facilities of TransCanada and Centra Ontario's EDA delivery points.

The gas will be used to meet normal market growth in Centra Ontario's franchise area.

Upstream transportation on NOVA and TransGas will be contracted for by Centra Ontario's suppliers. Downstream transportation will be provided by Centra Ontario.

Centra Ontario's supply portfolio, which is made up of short, medium and long-term contracts, contains some inherent flexibility to meet part of the increased demand in the EDA. A competitive bidding process will be used, effective 1 November 1997, to supply the remaining incremental gas requirement.

3.2.3 Union Gas Limited (Central Delivery Area ("CDA"))

Union Gas Limited ("Union") has executed a ten-year FT Service Contract with TransCanada, dated 2 October 1996, for the delivery of 283.0 $10^3 \text{m}^3/\text{d}$ (10.0 MMcf/d) of gas, commencing 1 November 1997. The gas will be shipped from Alberta and Saskatchewan, to the point of interconnection between the pipeline facilities of TransCanada and Union's CDA delivery points.

The gas will be used to meet normal market growth in Union's franchise area.

Upstream transportation on NOVA and TransGas will be contracted for by Union's suppliers. Downstream transportation will be provided by Union.

Union's supply portfolio, which is made up of short, medium and long-term contracts, contains some inherent flexibility to meet part of the increased demand in the CDA. A competitive bidding process will be used, effective 1 November 1997, to supply the remaining incremental gas requirement.

3.2.4 Commercial Alcohols Inc.

Commercial Alcohols Inc. ("Commercial Alcohols") has executed a ten-year Precedent Agreement with TransCanada, dated 26 March 1996, for the delivery of 180.0 $10^3 \text{m}^3/\text{d}$ (6.4 MMcf/d) of gas, commencing 1 November 1997. The gas will be shipped from Alberta to the point of interconnection between the pipeline facilities of TransCanada and Union's distribution facilities near Parkway, Ontario.

The gas will be used to provide energy for the operation of an ethanol plant which Commercial Alcohols will be constructing in Chatham, Ontario in 1996. The plant will produce ethanol for fuel and industrial purposes. In addition, cattle feed and carbon dioxide ("CO₂") will be produced as co-products.

The gas will be burned in a co-generation system, which will provide steam and electricity for the process. As well, some of the gas will be used for direct firing of the dryer for the production of cattle feed.

The entire output of fuel ethanol will be sold to one major gasoline retailer, under a ten-year take-or-pay contract. The industrial alcohol produced at Chatham will also be sold under currently-used market procedures.

The CO₂ produced by the plant will be sold under contract to Liquid Carbonic Inc. ("Liquid Carbonic"), of Markham, Ontario. Liquid Carbonic will construct and operate a CO₂ compressing station on the site of the ethanol plant. The CO₂ sales contract covers a 15-year period and includes the entire volume of CO₂ produced. Commercial Alcohols has also entered into a contract with Casco, Inc. of Etobicoke, Ontario for the marketing of the ethanol plant's production of cattle feed.

Upstream transportation on NOVA will be contracted for by Northstar Energy Corporation ("Northstar"). Downstream transportation will be provided by Union.

Commercial Alcohols has executed a Gas Purchase Agreement, dated 16 January 1996, to terminate on 1 January 2007, with Northstar for the supply of gas required. Northstar's corporate supply pool will be utilized to meet the required volumes. An Alberta Energy Utilities Board ("EUB") reserves under control listing for Northstar was provided together with a corporate supply and demand balance indicating sufficient supply is available to meet projected annual requirements.

3.2.5 The Consumers' Gas Company Ltd. (EDA)

The Consumers' Gas Company Ltd. ("Consumers'") has executed a ten-year Precedent Agreement with TransCanada, dated 26 March 1996, for the delivery of 708.0 10³m³/d (25.0 MMcf/d) of gas, commencing 1 November 1997. The gas will be shipped from Alberta and Saskatchewan, to the various points of interconnection between the pipeline facilities of TransCanada and Consumers' in the EDA.

The gas will be used to meet normal market growth in Consumers' franchise area. Consumers' submitted that the increase in request for service of 708.0 10³m³/d (25.0 MMcf/d) represents a 2.5 percent increase in Consumers' total transportation requirement (FT + FST¹).

Upstream transportation on NOVA and TransGas will be contracted for by Consumers' suppliers. Downstream transportation will be provided by Consumers'.

Consumers' supply portfolio, which is made up of short, medium and long-term contracts, contains some inherent flexibility to meet part of the increased demand in the EDA. A competitive bidding process will be used, effective 1 November 1997, to supply the remaining incremental gas requirement.

¹ Firm Service Tendered

3.2.6 Simplot Canada Limited

Simplot Canada Limited ("Simplot") has executed a ten-year Precedent Agreement with TransCanada, dated 29 March 1996, for the delivery of 558.2 $10^3\text{m}^3/\text{d}$ (19.7 MMcf/d) of gas, commencing 1 November 1997. The gas will be shipped from Alberta and various receipt points in Saskatchewan to the point of interconnection between the pipeline facilities of TransCanada and a new distribution line to be built by Centra Gas Manitoba Inc. ("Centra Manitoba") near Brandon, Manitoba. Simplot has executed a second ten-year Precedent Agreement with TransCanada, dated 29 March 1996, for the delivery of 150.0 $10^3\text{m}^3/\text{d}$ (5.3 MMcf/d) of gas, commencing 1 November 1997. The gas will be shipped from Welwyn, Saskatchewan to Brandon, Manitoba.

Simplot currently holds 611.8 $10^3\text{m}^3/\text{d}$ (21.6 MMcf/d) of firm capacity on TransCanada, 511.8 $10^3\text{m}^3/\text{d}$ (18.1 MMcf/d) from Empress, Alberta and another 100 $10^3\text{m}^3/\text{d}$ (3.5 MMcf/d) of firm capacity from its contracted gas storage facilities at Welwyn, Saskatchewan..

The incremental gas will be used as feedstock in the production process of a new, larger capacity ammonia plant which will be located in the same site and will replace two original ammonia plants. The fertilizer manufacturing facilities synthesize nitrogen, phosphate and sulphur fertilizer from natural gas, air and water, together with sulphur and phosphoric acid. Simplot stated that continual upgrading of its ammonia facilities is necessary to keep pace with improvements in fertilizer production, energy efficiency and pollution control technology. As well, Simplot submitted that since the commencement of its ammonia operations in 1966, the company's market has enjoyed steady growth. The new plant will initially require 1 320 $10^3\text{m}^3/\text{d}$ (46.6 MMcf/d) of gas to meet production capacity. The greater capacity requirements of the new plant form the basis of Simplot's new TransCanada service requests commencing 1 November 1997. The original plants have current gas requirements of some 570 to 700 $10^3\text{m}^3/\text{d}$ (20.1 to 24.7 MMcf/d), dependent upon seasonal load fluctuation, and are scheduled to cease operations and be replaced by 1 November 1997. Simplot indicated that the increase in transportation requirements for 1 November 1997 represents normal growth in demand of its existing markets.

Upstream transportation on NOVA and TransGas will be contracted for by Simplot. Downstream transportation will be provided by Centra Manitoba. The Manitoba Public Utilities Board approved the construction by Centra Manitoba of an additional 305 mm (12 inch) line to the Simplot facility. Simplot is currently served by a 254 mm (10 inch) line.

Simplot has significant experience in purchasing its own gas supplies and was one of the earliest downstream shippers on the TransCanada system to arrange for direct purchases of gas following industry deregulation in the mid-1980s. Simplot adopts a portfolio approach to its gas contracting practices, including short to medium-term purchase contracts, the utilization of natural gas storage to provide base load volume and backstopping flexibility, and the purchasing of gas in both Alberta and Saskatchewan. Simplot has developed a strong working relationship with the gas producer and aggregator/market community and has retained, since 1990, the services of France Financial Consulting Ltd. for assistance in making the necessary arrangements for gas supplies. In order to meet its expanded gas requirements, Simplot plans to arrange purchase contracts, effective November 1997, with medium-term (five year) gas supplies from Saskatchewan producers and two-to-three year term gas supplies from both Alberta and Saskatchewan producers. The balance is to be contracted on a month-to-month basis by way of a competitive bidding process with at least 40 gas suppliers. Simplot

will also maintain its variable supply contract to meet its peak day requirements. Extra volumes required for plant start-up during the summer/fall of 1997 will be supplied from the short-term spot market.

3.2.7 Union Gas Limited (CDA)

Union has executed a ten-year Precedent Agreement with TransCanada, dated 19 July 1996, for the delivery of $1\ 133.1\ 10^3\text{m}^3/\text{d}$ (40.0 MMcf/d) of gas commencing 1 November 1997. The gas will be shipped from Alberta and Saskatchewan to the point of interconnection between the pipeline facilities of TransCanada and Union's CDA delivery points.

The gas will be used to meet normal market growth in Union's franchise area.

Upstream transportation on NOVA and TransGas will be contracted for by Union's suppliers. Downstream transportation will be provided by Union.

Union's supply portfolio, which is made up of short, medium and long-term contracts, contains some inherent flexibility to meet part of the increased demand in the CDA. A competitive bidding process will be used, effective 1 November 1997, to supply the remaining incremental gas requirement.

3.3 New Export Services

The applied-for facilities are supported by twelve export projects represented by eight export shippers which have requested incremental firm service totalling $4\ 776\ 10^3\text{m}^3/\text{d}$ (168.6 MMcf/d) or 59 percent of the total new firm service requirements (refer to Table 3-2).

3.3.1 Coastal Gas Marketing Company - American Crystal/ProGold Projects

Coastal Gas Marketing Company ("Coastal") has executed a ten and a half year Precedent Agreement with TransCanada, dated 26 March 1996, for the delivery of $512.7\ 10^3\text{m}^3/\text{d}$ (18.1 MMcf/d) of gas, commencing 1 April 1997. The gas will be shipped from Alberta to the point of interconnection between the pipeline facilities of TransCanada and Viking Gas Transmission Company ("Viking") at Emerson, Manitoba.

The gas will be used to supply Coastal's customers, American Crystal Sugar Company ("ACS") and ProGold Limited Liability Company ("ProGold") which operate, or will operate, industrial plants in Minnesota and North Dakota, respectively. ACS operates five sugar factories in North Dakota and Minnesota, all of which currently burn coal as a primary energy source. As a proactive strategy to meet or exceed U.S. Federal and State air emissions standards, ACS is converting three of its Minnesota sugar factories to burn natural gas.

ProGold is in the process of constructing a corn wet-milling plant near Wahpeton, North Dakota, and was expected to commence commercial operation in the fall of 1996. The wet-milling plant will use natural gas as the primary fuel for its boiler and dryers.

ACS and ProGold have signed ten-year firm Gas Sales Contracts with Coastal, both dated 20 March 1996, commencing 1 November 1997.

Morrison Petroleums Ltd. ("Morrison") is in the process of obtaining upstream transportation on NOVA. Petro-Canada has firm service agreements covering the requisite capacity on NOVA for the term required. Downstream transportation will be provided by ACS and ProGold which have both executed 15-year Precedent Agreements with Viking, both dated 28 August 1995, to provide firm transportation from the international border at Emerson, Manitoba, to a number of delivery points in Minnesota. The Viking/ACS and Viking/ProGold Precedent Agreement volumes are for 10 920 decatherms per day (10.7 MMcf/d) and 7 500 decatherms per day (7.4 MMcf/d), respectively.

Coastal has signed an eleven-year Gas Purchase Agreement dated 1 March 1996 with Petro-Canada for 313.5 $10^3 \text{m}^3/\text{d}$ (11.1 MMcf/d) and an eleven-year Gas Purchase Agreement dated 14 March 1996 with Morrison for 199.1 $10^3 \text{m}^3/\text{d}$ (7.0 MMcf/d). Petro-Canada and Morrison will utilize their corporate supply pools to supply the requisite volumes. The gas supply arrangements were reviewed in detail in the recent GHW-1-96 proceeding. The supply information submitted in that proceeding was found to be adequate for the project.

3.3.2 Eagle Gas Marketing, LLC.

Eagle Gas Marketing, LLC. ("Eagle") has executed a ten-year Precedent Agreement with TransCanada, dated 25 March 1996, for the delivery of 453.2 $10^3 \text{m}^3/\text{d}$ (16.0 MMcf/d) of gas, commencing 1 November 1997. The gas will be shipped from Saskatchewan to the point of interconnection between the pipeline facilities of TransCanada and Great Lakes Gas Transmission Company Limited Partnership ("Great Lakes") at Emerson, Manitoba.

Eagle and UMC Petroleum Corporation ("UMC") are working together on this project on an equal basis to obtain transportation capacity for 453.2 $10^3 \text{m}^3/\text{d}$ (16 MMcf/d) of their Montana gas production (226.6 $10^3 \text{m}^3/\text{d}$ (8 MMcf/d) each). In conjunction with this project, 453.2 $10^3 \text{m}^3/\text{d}$ (16 MMcf/d) of capacity is required on both TransCanada and Great Lakes. In order to streamline the process of obtaining transportation service, duties were split between the parties with Eagle responsible for obtaining TransCanada capacity and UMC responsible for obtaining Great Lakes capacity. Each party agreed to assign 50 percent its capacity to the other party.

Fifty percent of the 453.2 $10^3 \text{m}^3/\text{d}$ (16 MMcf/d) volume is owned by each of Eagle and UMC. Eagle's portion of the gas will be sold to Rockland Pipeline Company ("Rockland") under a ten-year firm gas sales agreement. Rockland receives the gas from Eagle at Carlton, Minnesota at the interconnection of the systems of Northern Natural Pipeline and Great Lakes. Rockland's primary market will consist of sales to commercial and industrial end-users and to Minnegasco in Minnesota. UMC has entered into a ten-year firm gas sales agreement for the sale of 226.6 $10^3 \text{m}^3/\text{d}$ (8 MMcf/d) to Carthage Energy Services Inc. of Traverse City, Michigan.

Eagle will contract for upstream transportation on Havre Pipeline Company, LLC ("Havre") and Many Islands Pipe Lines (Canada) Limited ("Many Islands"), in Saskatchewan. Havre is owned 25 percent and 50 percent by Eagle and UMC respectively. Many Islands has sufficient existing capacity under long-term arrangements to transport the project volumes. Downstream transportation on Great Lakes will be provided by UMC under a ten-year firm service Precedent Agreement, to St. Clair, Michigan, commencing 1 November 1998. In the first year of service, 1 November 1997 to 31 October 1998, the gas may be sold at Emerson or alternatively delivered to markets off of the Great Lakes system using interruptible capacity or temporary capacity assignments.

Eagle and UMC own or control gas reserves located in Montana which will be utilized to supply gas for this project. Reserves estimates prepared by an independent consultant, McDaniel & Associates, were provided indicating adequate supply for this project.

3.3.3 Renaissance Energy Ltd. - Iroquois Energy Brokers, LLC Project

Renaissance has executed a ten-year Precedent Agreement with TransCanada, dated 26 March 1996, for the delivery of 282.0 $10^3 \text{m}^3/\text{d}$ (10.0 MMcf/d) of gas, commencing 1 November 1997. The gas will be shipped from Alberta to the point of interconnection between the pipeline facilities of TransCanada and National Fuel Gas Supply Corporation ("National Fuel") at Niagara Falls, Ontario.

The gas will be sold to Iroquois Energy Brokers, LLC ("Iroquois Energy") to replace short-term arrangements in Iroquois Energy's current supply portfolio. Iroquois Energy is a gas marketing company operating in the State of New York with annual sales of 212 10^6m^3 (7.5 Bcf). The gas will be used to meet projected market growth. In 1995, Iroquois Energy's aggregate gas portfolio supplied over 300 small industrial and commercial customers, including a group of universities in the State of New York under a ten-year arrangement which commenced in 1993. The proposed export gas will represent about 40 percent of Iroquois Energy's supply portfolio.

Upstream transportation on NOVA exists as Renaissance holds firm service agreements for the requisite capacity. Downstream transportation will be provided on National Fuel's system pursuant to existing ten-year, firm transportation arrangements between National Fuel and Iroquois Energy. Accordingly, no additional capacity will be required on National Fuel.

Renaissance has signed a renewable Gas Sales Contract, dated 1 March 1996, with Iroquois Energy for the required volume.

Renaissance will be providing gas for this project from its corporate supply pool. The gas supply arrangements were reviewed in detail in the recent GHW-1-96 proceeding. The supply information submitted in that proceeding was found to be adequate for the project.

3.3.4 Coastal Gas Marketing Company - Chippawa Project

Coastal has executed a ten-year Precedent Agreement with TransCanada, dated 19 July 1996, for the delivery of 1 365.4 $10^3 \text{m}^3/\text{d}$ (48.2 MMcf/d) of gas, commencing 1 November 1997. The gas will be shipped from Alberta to the point of interconnection between the pipeline facilities of TransCanada and Empire State Pipeline Company ("Empire") at Chippawa, Ontario.

The gas will be used by Coastal, as part of its supply portfolio, to serve its general markets in the U.S. Northeast which consist primarily of local distribution companies ("LDCs"), electric generation companies and industrial end-users. The LDCs include National Fuel Gas Supply Corporation, Niagara Mohawk Power Corporation, New York State Electric & Gas Corporation, and Rochester Gas & Electric Corporation. Coastal currently markets approximately 14 $10^6 \text{m}^3/\text{d}$ (0.5 Bcf/d) of gas in the U.S. Northeast.

Upstream transportation on NOVA is expected to be available and Coastal, upon receipt of the firm service volume, will assign the NOVA capacity to its suppliers mentioned below. Downstream

transportation will be provided on Empire's system pursuant to an executed ten-year firm Precedent Agreement between Empire and Coastal, dated 1 May 1996.

Coastal has entered into Gas Purchase Agreements with seven suppliers including Canadian Natural Resources Ltd. ("CNRL"), Cimarron Petroleum Ltd., Jordan Petroleum Ltd. ("Jordan"), Orbit Oil & Gas, Rigel Oil & Gas Ltd., Rio Alto Exploration Ltd. ("Rio Alto") and Wainoco Oil Corporation, for a total of $1\ 367.5\ 10^3\text{m}^3/\text{d}$ (48.3 MMcf/d) of gas for delivery to Empress, Alberta, commencing 1 November 1997 until 31 October 2007. The gas supply arrangements were reviewed in detail in the recent GHW-1-96 proceeding. The supply information submitted in that proceeding was found to be adequate for the project.

3.3.5 Coastal Gas Marketing Company - Iroquois Project

Coastal has executed a ten-year Precedent Agreement with TransCanada, dated 19 July 1996, for the delivery of $396.6\ 10^3\text{m}^3/\text{d}$ (14.0 MMcf/d) of gas, commencing 1 November 1997. The gas will be shipped from Alberta to the point of interconnection between the pipeline facilities of TransCanada and Iroquois Gas Transmission System, L.P. ("Iroquois") at Iroquois, Ontario.

The gas will be used by Coastal, as part of its supply portfolio, to serve its general markets in the U.S. Northeast, which consist primarily of LDCs, electric generation companies and industrial end-users. Coastal currently markets approximately $14\ 10^6\text{m}^3/\text{d}$ (0.5 Bcf/d) of gas in the U.S. Northeast.

Upstream transportation on NOVA exists and Coastal intends to assign the NOVA capacity to its suppliers mentioned below. Downstream transportation will be provided on Iroquois' system pursuant to an executed ten-year firm Precedent Agreement between Iroquois and Coastal, dated 10 April 1996.

Coastal has entered into long-term Gas Purchase Agreements with three suppliers including Jordan, Rio Alto and Pinnacle Resources Ltd. ("Pinnacle"), for a total of $393.2\ 10^3\text{m}^3/\text{d}$ (14.0 MMcf/d) of gas for delivery to Empress, Alberta commencing 1 November 1997 until 31 October 2007. Jordan, Rio Alto and Pinnacle will provide gas from their corporate supply pools. Each of the three producers has submitted a summary of their corporate supply pools and a corporate supply and demand balance indicating sufficient supply to meet requisite volumes. These supply arrangements will also be examined in the Board's upcoming proceeding on gas export licences.

3.3.6 Enron Capital & Trade Resources Canada Corp.

Enron Capital & Trade Resources Canada Corp. ("Enron") has executed a ten-year Precedent Agreement with TransCanada, dated 19 July 1996, for the delivery of $435.9\ 10^3\text{m}^3/\text{d}$ (15.4 MMcf/d) of gas, commencing 1 November 1997. The gas will be shipped from Alberta to the point of interconnection between the pipeline facilities of TransCanada and National Fuel at Niagara Falls, Ontario.

The gas will be acquired by Enron Capital & Trade Resources Corp. ("ECTR") and used as part of its overall corporate gas supply portfolio. Enron and ECTR have entered into a ten-year firm purchase/sales agreement dated 1 June 1994 with a Confirmation Letter dated 29 April 1996. ECTR generally expects that the subject natural gas will be utilized to serve the U.S. Northeast market currently under long-term contracts to ECTR. ECTR has committed to deliver approximately

5 600 $10^3 \text{m}^3/\text{d}$ (197 MMcf/d) in respect of five long-term supply contracts with Consolidated Edison Company of New York, Inc. ("Consolidated Edison"), New York Power Authority, Elizabethtown Gas Co., Long Island Lighting Company and Brooklyn Union Gas. The gas exported will displace U.S. domestic gas sources currently serving these long-term sales contracts.

Upstream transportation on NOVA exists as Enron holds firm service agreements for the requisite capacity. Downstream transportation will be provided on National Fuel's system pursuant to an executed ten-year firm Precedent Agreement between National Fuel and ECTR, dated 30 April 1996, for delivery to Leidy, Pennsylvania. Further downstream transportation will be provided by Transcontinental Gas Pipe Line Corporation ("Transco") pursuant to an executed 15-year firm Precedent Agreement between Transco and ECTR, dated 18 December 1995.

Enron has entered into a ten-year Master Firm Gas Purchase/Sale Agreement with CNRL for approximately 283 $10^3 \text{m}^3/\text{d}$ (10.0 MMcf/d) of gas, plus fuel, with a Confirmation Letter dated 2 April 1996. Enron has also entered into a ten-year Master Firm Gas Purchase/Sale Agreement with Beau Canada Exploration Ltd. ("Beau Canada") for approximately 142 $10^3 \text{m}^3/\text{d}$ (5.0 MMcf/d) of gas, plus fuel, with a Confirmation Letter dated 1 April 1996. CNRL and Beau Canada will utilize their corporate supply pools to meet the required volumes. Each producer has submitted a corporate supply pool summary and a corporate supply and demand balance indicating sufficient supply is available to meet projected annual requirements. These supply arrangements will also be examined in the Board's upcoming proceeding on gas export licences.

3.3.7 PanEnergy Marketing, A Division of PanEnergy Services Canada Ltd.

PanEnergy Marketing, A Division of PanEnergy Services Canada Ltd. ("PanEnergy") has executed a ten-year Precedent Agreement with TransCanada, dated 19 July 1996, for the delivery of 246.5 $10^3 \text{m}^3/\text{d}$ (8.7 MMcf/d) of gas, commencing 1 November 1997. The gas will be shipped from Alberta and Saskatchewan receipt points to the point of interconnection between the pipeline facilities of TransCanada and National Fuel at Niagara Falls, Ontario.

On 1 August 1996, PanEnergy Corp., an affiliate of PanEnergy, and Mobil Corporation ("Mobil") completed the formation of previously announced gas marketing business entities in Canada and the United States. In Canada, the new business is known as PanEnergy Marketing Limited Partnership ("PanEnergy Marketing") which will initially market some 42.5 $10^6 \text{m}^3/\text{d}$ (1.5 Bcf/d) in Canada, including a commitment to market all of Mobil's Canadian gas production over the next ten years. PanEnergy Marketing was assigned all aspects of the present export project in Canada from PanEnergy. In the U.S., the new business entity is known as PanEnergy Trading and Marketing Services, LLC ("PTMS") and has an initial marketing volume of approximately 198 $10^6 \text{m}^3/\text{d}$ (7 Bcf/d). PTMS has committed to market all of Mobil's U.S. gas production over a ten-year period. PTMS will assume responsibility for all U.S. aspects of the present export project including being buyer under the Export Contract and holder of the downstream transportation.

The gas will be used by PTMS to serve long-term U.S. Northeast markets. PTMS has market contracts in place with Consolidated Edison and Boston Edison Company ("Boston Edison") for volumes greater than the requisite volume. PanEnergy Marketing submitted that it is PTMS' intent to optimize the use of its overall supply and transportation portfolio in the most economically feasible manner possible and accordingly, the transportation sought by PanEnergy Marketing in the current

application could be used to provide gas to markets in addition to Consolidated Edison and Boston Edison.

Upstream transportation on NOVA exists as PanEnergy Marketing holds firm service agreements for the requisite capacity. Downstream transportation will be provided on National Fuel's system pursuant to an assigned executed 12-year firm arrangement between National Fuel and PTMS, originally dated 29 March 1996.

Further downstream transportation will be provided by Transco and Algonquin Gas Transmission Company ("Algonquin") pursuant to executed firm arrangements, dated 23 October 1995 and 1 November 1995, respectively. The existing Transco and Algonquin firm service contracts have approximately two years and two and a half years, respectively, remaining after 1 November 1997.

PTMS will purchase gas from PanEnergy Marketing at the TransCanada delivery point of Niagara Falls, Ontario under a ten year 1997 Restated Gas Sale Agreement, dated 1 August 1996. PanEnergy Marketing has been assigned the rights to ten-year term Gas Purchase Agreements with Beau Canada and Pinnacle for $141.7 \text{ } 10^3 \text{m}^3/\text{d}$ (5.0 MMcf/d) and $105.5 \text{ } 10^3 \text{m}^3/\text{d}$ (3.7 MMcf/d), respectively, both commencing 1 November 1997. Beau Canada and Pinnacle will provide gas from their corporate supply pools. Each producer has submitted a summary of their corporate supply pools and a corporate supply and demand balance indicating sufficient supply to meet requisite volumes. These supply arrangements will also be examined in the Board's upcoming proceeding on gas export licences.

3.3.8 ProGas Limited - Emerson 1 Project

ProGas Limited ("ProGas") has executed a ten-year Precedent Agreement with TransCanada, dated 19 July 1996, for the delivery of $160.0 \text{ } 10^3 \text{m}^3/\text{d}$ (5.6 MMcf/d) of gas, commencing 1 November 1997. The gas will be shipped from Alberta to the point of interconnection between the pipeline facilities of TransCanada and Viking at Emerson, Manitoba.

The gas will be sold to Great Plains Natural Gas Company ("Great Plains"), a Minnesota LDC, under an amended 15-year Gas Sales Contract between Great Plains and ProGas U.S.A., Inc. ("ProGas U.S.A."), a wholly-owned subsidiary of ProGas, commencing 1 November 1997.

Upstream transportation on NOVA exists as ProGas holds firm service agreements for the requisite capacity. Downstream transportation will be provided on Viking's system pursuant to an executed ten-year, firm Precedent Agreement between Viking and ProGas U.S.A., dated 30 April 1996.

ProGas and ProGas U.S.A. have a renewable Gas Purchase Contract in place, amended 2 July 1990.

ProGas submitted that it will supply the gas which underpins its current request for transportation on TransCanada from its contracted reserves in Western Canada. ProGas currently has gas under contract in over 210 fields and 1 500 gas pools from more than 170 producers. ProGas filed a summary of its contracted reserves together with a comparison of productive capacity and annual requirements for the contracted reserves. The comparison indicates ProGas will be able to meet its contractual commitments including the requisite volume. These supply arrangements are also being examined in the current GHW-2-96 proceeding.

3.3.9 ProGas Limited - Iroquois Project

ProGas has executed a ten-year Precedent Agreement with TransCanada, dated 19 July 1996, for the delivery of 310.0 $10^3 \text{m}^3/\text{d}$ (10.9 MMcf/d) of gas, commencing 1 November 1997. The gas will be shipped from Alberta to the point of interconnection between the pipeline facilities of TransCanada and Iroquois at Iroquois, Ontario.

The gas will be used by ProGas U.S.A., a wholly-owned subsidiary of ProGas, initially for short to medium-term sales, having a duration of no more than two years, to LDCs, marketers, industrial/commercial end-users, and electricity generators. Even without current long-term market commitments to underpin its service request, ProGas submitted that it believes that TransCanada should accept its service request as ProGas is able to demonstrate producer support and sufficient gas supply to fully utilize the requisite volume.

ProGas U.S.A. has a number of long-term firm U.S. sales agreements which could be served utilizing the requisite volume; however, it prefers initially to utilize the requisite volume for short and medium-term sales. ProGas submitted that export pipeline capacity utilization to the U.S. Northeast has remained high. ProGas added that increases in exports to the U.S. Northeast have closely matched increases in U.S. Northeast gas demand and that there is an increasing reliance on short and medium-term gas supply to meet market demand. ProGas contended that it expects these trends to continue.

Upstream transportation on NOVA exists as ProGas holds firm service agreements for the requisite capacity. Downstream transportation will be provided on Iroquois's system pursuant to an executed ten-year firm Precedent Agreement between Iroquois and ProGas U.S.A., dated 11 April 1996.

ProGas and ProGas U.S.A. have a renewable Gas Purchase Contract in place, amended 2 July 1990.

ProGas submitted that it will supply the gas which underpins its current request for transportation on TransCanada from its contracted reserves in Western Canada. ProGas currently has gas under contract in over 210 fields and 1500 gas pools from more than 170 producers. ProGas filed a summary of its contracted reserves together with a comparison of productive capacity and annual requirements for the contracted reserves. The comparison indicates ProGas will be able to meet its contractual commitments including the requisite volume. These supply arrangements will also be examined in the Board's upcoming proceeding on gas export licences.

3.3.10 Ranger Oil Limited

Ranger Oil Limited ("Ranger") has executed a ten-year Precedent Agreement with TransCanada, dated 19 July 1996, for the delivery of 141.6 $10^3 \text{m}^3/\text{d}$ (5.0 MMcf/d) of gas, commencing 1 November 1997. The gas will be shipped from Alberta to the point of interconnection between the pipeline facilities of TransCanada and National Fuel at Niagara Falls, Ontario.

The gas will be acquired by Enron from Ranger on the Canadian side of the Canadian-U.S. border near Niagara Falls, Ontario. Enron and ECTR have entered into a ten-year firm purchase/sale agreement dated 1 June 1994 with a Confirmation Letter dated 29 April 1996. Ownership of the gas will transfer from Enron to ECTR on the Canadian side of the Canada-U.S. border near Niagara Falls, Ontario.

ECTR submitted that it is the largest buyer and seller of natural gas in North America. It will market the gas as part of its overall corporate gas supply portfolio. ECTR further submitted that it expects that the gas will be utilized to serve the U.S. Northeast market currently under long-term contracts to ECTR. ECTR has committed to deliver approximately $5\ 600\ 10^3\text{m}^3/\text{d}$ (197 MMcf/d) in respect of five long-term supply contracts with Consolidated Edison, New York Power Authority, Elizabethtown Gas Co., Long Island Lighting Company and Brooklyn Union Gas. The gas exported will displace U.S. domestic gas sources currently serving these long-term sales contracts.

Upstream transportation on NOVA exists as Ranger holds firm service agreements for the requisite capacity. Downstream transportation will be provided on National Fuel's system pursuant to an executed ten-year firm Precedent Agreement between National Fuel and ECTR, dated 30 April 1996. Further downstream transportation will be provided by Transco pursuant to an executed 15-year firm Precedent Agreement between Transco and ECTR, dated 18 December 1995.

Ranger and Enron have entered into a ten-year Master Firm Gas Purchase/Sale Agreement dated 22 April 1996 with a Confirmation Letter dated 2 May 1996 for approximately $142\ 10^3\text{m}^3/\text{d}$ (5.0 MMcf/d) of gas for delivery to Niagara, Ontario commencing 1 November 1997. Ranger will provide gas from its corporate supply pool. Ranger has submitted a summary of its corporate supply pool and a corporate supply and demand balance indicating sufficient supply to meet contracted volumes. These supply arrangements will also be examined in the Board's upcoming proceeding on gas export licences.

3.3.11 Renaissance Energy Ltd. - Midwest Project

Renaissance has executed a ten-year Precedent Agreement with TransCanada, dated 19 July 1996, for the delivery of $90.7\ 10^3\text{m}^3/\text{d}$ (3.2 MMcf/d) of gas, commencing 1 November 1997. The gas will be shipped from Alberta to the point of interconnection between the pipeline facilities of TransCanada and Great Lakes at Emerson, Manitoba.

The gas will be received by Renaissance's subsidiary, REI, at Carlton, Minnesota. REI will market the gas to a client base of LDCs and industrial customers. REI currently markets approximately $4\ 000\ 10^3\text{m}^3/\text{d}$ (140 MMcf/d) of gas to such customers. Renaissance and REI have a long-term gas supply contract in place until 31 October 2010 for the required volume.

Upstream transportation on NOVA exists as Renaissance holds firm service agreements for the requisite capacity. Downstream transportation will be provided on the Great Lakes system pursuant to an executed long-term firm arrangement between Great Lakes and REI, commencing 8 May 1996.

Renaissance's corporate supply pool will be utilized to meet the required volume. A summary of its corporate supply pool was submitted together with a corporate supply and demand balance indicating sufficient supply available to meet projected annual requirements.

3.3.12 United States Gypsum Company

United States Gypsum Company ("US Gypsum") has executed a ten-year Precedent Agreement with TransCanada, dated 19 July 1996, for the delivery of $382.4\ 10^3\text{m}^3/\text{d}$ (13.5 MMcf/d) of gas,

commencing 1 November 1997. The gas will be shipped from Alberta to the point of interconnection between the pipeline facilities of TransCanada and Great Lakes at Emerson, Manitoba.

The gas will be used by US Gypsum, a wholly-owned subsidiary of USG Corporation, to operate gypsum board plants in the U.S. Midwest.

Upstream transportation on NOVA will be contracted for by US Gypsum's gas supplier, Renaissance. Downstream transportation will be provided on the Great Lakes system pursuant to an executed renewable, long-term firm arrangement between Great Lakes and US Gypsum, dated 23 May 1995.

US Gypsum has entered into a ten-year term Letter Agreement, dated 2 May 1996, with Renaissance for a maximum daily quantity of $390.9 \text{ } 10^3 \text{ m}^3/\text{d}$ (13.8 MMcf/d) of gas for delivery to Empress, Alberta commencing 1 November 1997. Renaissance's corporate supply pool will be utilized to meet the required volume. A summary of its corporate supply pool was submitted together with a corporate supply and demand balance indicating sufficient supply available to meet projected annual requirements. These supply arrangements will also be examined in the Board's upcoming proceeding on gas export licences.

Views of Parties

Renaissance, Canadian Association of Petroleum Producers ("CAPP"), Coastal, Consumers', Eagle, Enron, Gaz Métropolitain, inc. ("GMI"), Simplot, and Union Gas/Centra Ontario all supported TransCanada's Part III Application for specific transportation services.

No parties questioned or challenged the requested project service requests or the need for the applied-for facilities.

Views of the Board

The Board finds TransCanada's requirements forecasts to be reasonable for the purpose of assessing TransCanada's facilities requirements for the 1997-98 contract year. In addition, the Board is satisfied that the new domestic and export transportation projects are sufficiently advanced, with respect to gas supply, upstream and downstream transportation arrangements, gas purchase and gas sales arrangements, and the securing of Canadian and U.S. regulatory approvals, to support TransCanada's facilities design. The Board believes that there is a reasonable expectation that all remaining contractual arrangements and regulatory approvals can be finalized in a timely manner to allow those services to commence as anticipated.

The Board is satisfied with TransCanada's forecasting methodologies and its approach to independent verification of the information furnished by prospective shippers. However, to ensure that the applied-for facilities, if certificated, are used and useful over the long term, the Board believes that it would be appropriate to condition any certificate requiring TransCanada, prior to the commencement of construction, to:

- demonstrate that, with respect to the new firm export services, all necessary U.S. and Canadian federal regulatory approvals, including applicable long-term Canadian export authorizations have been granted;
- demonstrate that, with respect to the transportation services of new firm volumes, the transportation service contracts have been executed;
- demonstrate that, with respect to the transportation services of new firm volumes, all necessary U.S. and Canadian regulatory approvals have been received for any required downstream facilities or transportation services;
- demonstrate that, with respect to the transportation services of new firm volumes, gas supply contracts have been executed; and
- identify any changes to TransCanada's base case requirements and the requirements for which the applied-for facilities are required.

The Board is satisfied that the aforementioned certificate conditions will ensure that only firm aggregate requirements underpin the construction of new facilities.

Consistent with the views expressed in the GHW-3-89 Reasons for Decision and for the purposes of this application, the Board does not require detailed gas supply information in support of Centra Ontario's, Consumers' and Union's services since these requests result from normal market growth within their franchise areas.

Taking into account the specific qualifications and conditions noted above, and for the purposes of this Part III proceeding, the Board is satisfied with the gas supply arrangements outlined for domestic and export shippers.

3.4 TransCanada's Amended Shippers Non-Approved FT Contracts

TransCanada's original 1997-98 Facilities Application, dated 3 April 1996, contained nine projects totalling $3\ 574\ 10^3\text{m}^3/\text{d}$ (126.3 MMcf/d) of requested new firm service. TransCanada indicated its reluctance to construct additional facilities to increase combined capacity given the current contract renewal rights as set out in Article 8 of the FT Toll Schedule. TransCanada submitted that the current contract renewal rights provisions provide a disincentive for existing shippers to extend their expiring transportation contracts for longer than the minimum period of one year or to provide notice earlier than six months prior to the expiry date of the contract. TransCanada further submitted that it initiated talks with the industry and affected stakeholders regarding TransCanada's contract expiry profile as well as the concerns of others about the terms and conditions associated with FT service.

On 2 August 1996, TransCanada filed its amended 1997-98 Facilities Application, including ten additional projects, for a total of 19 projects requiring a total of $8\ 118\ 10^3\text{m}^3/\text{d}$ (286.7 MMcf/d) of new firm service. To be included in TransCanada's amended Facilities Application, the "amended application" shippers, referred to by TransCanada as bullpen shippers, executed Precedent Agreements which contain clauses that are not included in the original expansion shippers' Precedent Agreements. In effect, the amended shippers agreed to enter an FT contract having renewal rights that are different

from those currently in the Tariff, knowing the change would follow industry/TransCanada discussions and Board approval. TransCanada submitted that it did not expect the Board to render any decisions related to this issue in this proceeding.

None of the amended shippers expressed an interest in discussing the non-approved FT contract issue during the hearing. TransCanada contended that nothing should be inferred from a party's silence on the record of the application with respect to these matters. TransCanada indicated that it did not wish to make changing the renewal rights a major issue in the proceeding as it did not wish to prejudice ongoing discussions.

During the hearing, TransCanada submitted, moreover, that it had made arrangements with each of the amended shippers that would allow TransCanada to proceed with construction of all of the applied-for facilities in the event a certificate is granted, and to do so even if the Board were to issue a future Part IV decision, regarding contract renewal rights, that is not satisfactory to TransCanada.

TransCanada further submitted that the amended shippers would be treated equally, that the arrangements would not require a Part IV approval from the Board, and that the arrangements would not bear on the rights of the other shippers.

Views of the Board

In determining whether the applied-for facilities for the amended shippers should be certificated, the Board is mindful of TransCanada's undertaking that the construction of those facilities is not dependent upon a future Part IV proceeding dealing with the contract renewal rights. The Board also acknowledges TransCanada's undertaking to treat all amended shippers equally, its assurances that any arrangement with the amended shippers will not have a negative impact on the rights of other shippers, and its assurances that all amended shipper's projects will be included in the future construction of the applied-for facilities in the event that a certificate is granted.

The Board is of the view, therefore, that the facilities required for the amended shippers' projects should be included in any approval granted.

Chapter 4

Facilities

4.1 Specific Facilities

The facilities included in TransCanada's 1997-98 Facilities Application, and considered in the GH-3-96 proceeding, consist of 205.5 km of pipeline looping, 13 permanent compressor units totalling 350 MW, manifolding at Stations 62, 77, 84, 110 and 112, aftercooler units at Stations 41, 55 and 99, stand-by units, aero assemblies and spares. The compressor units comprise seven new 28.3 MW turbocompressor units at Stations 5, 13, 21, 60, 75, 88 and 102, five new 28.3 MW electric powered units at Stations 9, 41 (2 units), 52 and 123, and one 10.4 MW turbocompressor unit at Station 211.

Details and costs of these facilities are provided in Figure 4-1 and Table 4-1. The total capital cost of the facilities is estimated at \$897 million (\$1996). TransCanada submitted that the proposed facilities are required to support the future aggregate requirements of TransCanada's shippers on 1 November 1997 and beyond.

In determining the overall mix of electric motor and gas turbine units applied for, as well as the specific unit types chosen for each location, TransCanada considered the proximity of suitable electric power sources, the ability of manufacturers to deliver units, and site specific concerns regarding noise and air emissions. TransCanada indicated that until it had more operating experience with large electric motor driven compressors, these units would not be placed at adjacent stations.

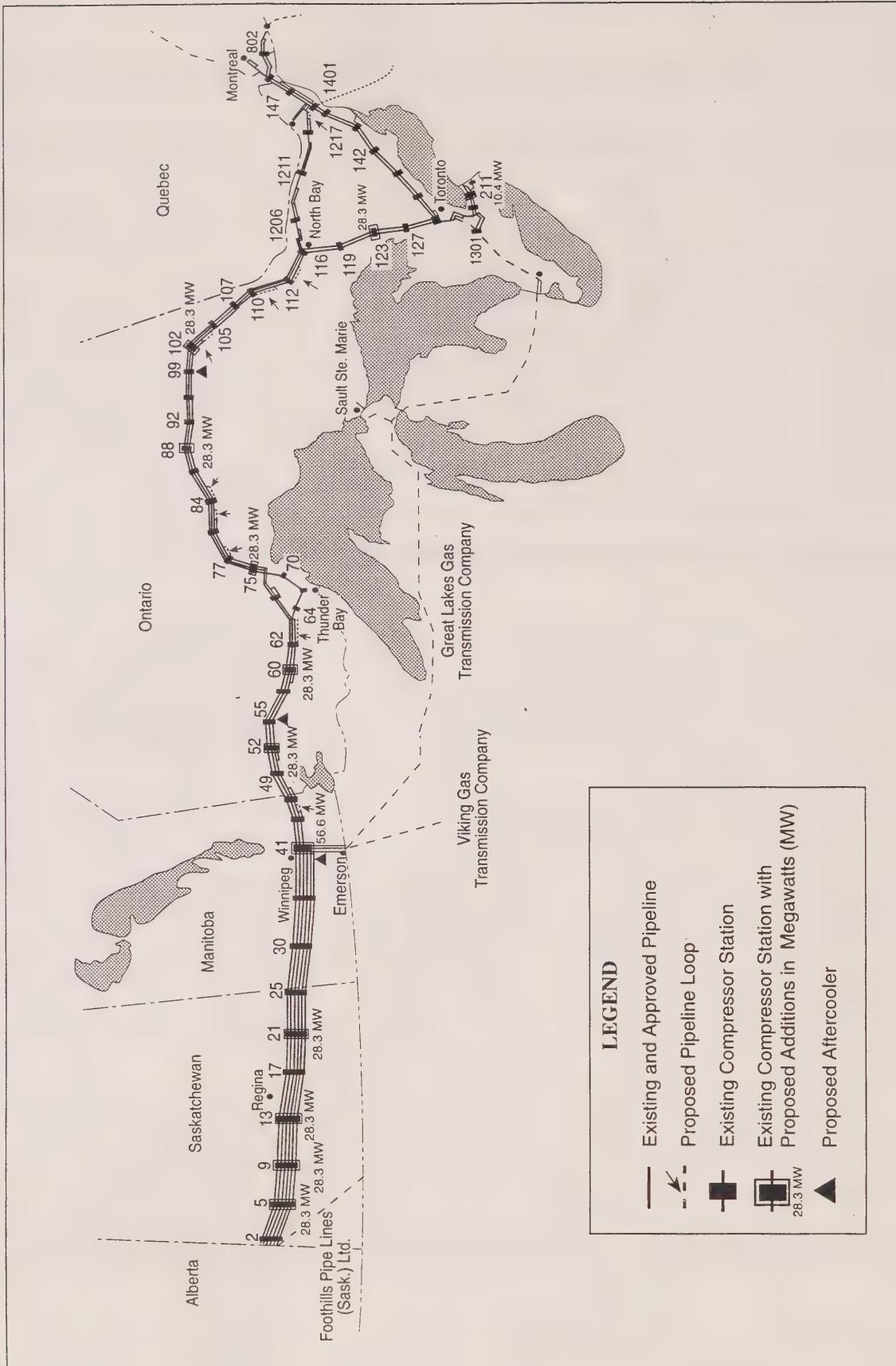
TransCanada indicated that a portion of the increase in capacity provided by the new units at Stations 5, 9, 13, 21, 41, 75 and 211 is required to restore the capability that would be lost due to retiring the A Plant units at Stations 13, 41 and 211 and relegating units 5A1, 9A1, 21A1 and 75A2 to critical standby. TransCanada indicated that its decision to place a unit on critical standby centres on whether the unit is still operable and reliable. The units TransCanada proposed to relegate to critical standby are Westinghouse units for which the manufacturer's support for parts and service could be discontinued in the future on short notice. In addition, TransCanada indicated that the regenerators for units 5A1, 9A1 and 21A1 are nearing the end of their life expectancy. Included in TransCanada's design is a five percent capacity reserve and a design excess, discussed in Section 4.2.2.

TransCanada stated that the majority of its applied-for facilities are scheduled to be installed in the summer of 1997. However, in order to meet all new firm services underpinning this application, TransCanada indicated that it must construct certain looping facilities during the 1996-97 winter as these facilities are located in areas of extensive muskeg and swampy terrain that can make summer access and construction extremely difficult and unnecessarily costly. These facilities, referred to as the Winter Loop facilities, were included in TransCanada's Exemption Application, discussed in Section 4.4.

Table 4-1
Description and Estimated Cost (1996 Base) of the Applied-for Facilities

<u>Line</u>	<u>Loop Description</u>	<u>Length (km)</u>	<u>Direct Cost (\$000)</u>
Central Section			
100-4	MLV 43 + 5.6 km to MLV 44	20.4	25 900
100-4	MLV 62 to MLV 63	29.8	47 385
100-4	MLV 77 to MLV 78	14.0	22 257
100-4	MLV 80 + 13.8 km to MLV 82	3.1	6 868
100-4	MLV 82 to MLV 83	30.7	44 952
100-4	MLV 84 to MLV 84 + 17.1 km	17.1	27 874
100-4	MLV 102 + 6.1 km to MLV 103	23.2	32 098
100-4	MLV 110 to MLV 111	32.0	51 180
100-4	MLV 112 to MLV 114	19.1	33 060
North Bay Shortcut			
1200-2	MLV 1219 to MLV 1219 + 16.1 km	<u>16.1</u>	<u>24 179</u>
	Total Looping	205.5	315 753
Compressor Plant Additions and Piping Modifications		Power	
Western Section			
Station 5		28.3 MW	31 924
Station 9		28.3 MW (electric)	30 946
Station 13		28.3 MW	30 803
Station 21		28.3 MW	30 562
Station 41		28.3 MW (electric)	28 872
Station 41		28.3 MW (electric)	27 691
Aftercooler Unit - Station 41			46 206
Compressor Modifications Units 41B & C			3 084
Central Section			
Station 52		28.3 MW (electric)	28 185
Station 60		28.3 MW	29 677
Station 75		28.3 MW	32 862
Station 88		28.3 MW	30 855
Station 102		28.3 MW	29 814
Station 123		28.3 MW (electric)	31 051
Aftercooler Unit - Station 55			22 750
Aftercooler Unit - Station 99			22 779
Kirkwall/Niagara Line			
Station 211		10.4 MW	<u>23 203</u>
Total Compression			481 264
Manifolding at Stations 62, 77, 84, 110 & 112; 18 Aero Assemblies; Standby Plant; Spares			36 346
Total Direct Costs		833 363	
Associated Indirect Costs		<u>63 632</u>	
Total Capital Costs		896 995	

Figure 4-1
TransCanada PipeLines Limited
Location of Applied-for Facilities



4.2 Appropriateness of Design

TransCanada indicated that the applied-for facilities represent the optimal facilities to meet its projected requirements, as well as assumed growth to ensure the consistency of the design with TransCanada's long-term requirements. In determining the optimal facilities, TransCanada used OPTO to assist in identifying the theoretically optimum combination of looping and compression facilities for the Central Section and the Great Lakes system.

For the Western Section, however, TransCanada did not see a need to use OPTO. As a result of TransCanada's Line 6 having been fully looped in 1996, TransCanada expected that the current expansion would be compression intensive. To verify this assumption, TransCanada generated two alternatives to meet the specified design volumes. One alternative consisted of compression facilities while the other alternative consisted of both looping and compression facilities in the first year. The results indicated that compression was more cost effective than looping for the volumes underpinning TransCanada's application.

4.2.1 Central Section Expansion

The OPTO computer model was used to generate feasible design alternatives and select incremental facilities to meet the corresponding incremental market requirements on TransCanada's Central Section. In arriving at the most economic combination of facilities, OPTO considered the "pipe versus compression balance" and chose the optimum compressor size. OPTO was also used to confirm the selection of facilities recommended by Great Lakes for an equivalent increase in capacity on the Great Lakes system.

TransCanada calculated the capital cost of each expansion alternative as well as the annual owning and operating cost ("AOOC"). The AOOC and the capital costs for each alternative were then compared to determine the least cost scenario.

TransCanada analyzed the alternatives from both short and long-term perspectives. In the short-term analysis, an expansion of $5\ 840\ 10^3\text{m}^3/\text{d}$ (206 MMcf/d) in 1997-98 was considered for three cases: Case 1, in which all gas moves through the Central Section; Case 2, in which 50 percent of the gas is moved through the Central Section and 50 percent through the Great Lakes system; and Case 3, in which all gas moves through the Great Lakes system. TransCanada indicated that a 50/50 split between the Central Section and Great Lakes, Case 2, had both lower capital costs and AOOC. In the long-term analysis, the assumed total volume of expansion was $14\ 160\ 10^3\text{m}^3/\text{d}$ (500 MMcf/d) over the next three years. In addition to the three cases considered for the short-term, the long-term analysis included a fourth case in which incremental throughput was assumed to move 75 percent through the Central Section and 25 percent through Great Lakes. TransCanada indicated that the 75 percent Central Section - 25 percent Great Lakes case exhibited both lower capital costs and AOOC.

TransCanada consulted Great Lakes with respect to Great Lakes' ability to provide additional transportation service starting 1 November 1997. Great Lakes indicated that, due to the length of time required for regulatory approvals to construct additional facilities, the earliest possible date it could provide additional transportation service was 1 November 1998, one year later than required. Consequently, TransCanada proposed to expand only the Central Section to accommodate 100 percent of the incremental volumes in 1997-98 and submitted a conditional request to Great Lakes for $2\ 833\ 10^3\text{m}^3/\text{d}$ (100 MMcf/d) of new service for the 1998-99 contract year.

The 1997-98 optimum design selected using the OPTO program consisted of three 22.8 MW compressor units, two 15.6 MW compressor units, one 10.4 MW compressor unit, 168.8 km of 1 067 mm loop, and two aftercoolers. The theoretical facilities generated by OPTO were then adjusted to reflect practical considerations. All units were increased to the 28.3 MW size because of economies of scale and the ability to retire older units from normal operation. TransCanada indicated that the 28.3 MW compressor units would have the benefit of ease of maintenance and operation, as well as sharing the same standby plant and spare parts. In addition, any excess power created by the larger units would either be available for future expansion at a very low unit cost or would allow TransCanada to retire older units from normal operation. For the Central Section, TransCanada ultimately proposed to construct six 28.3 MW compressor units, 189.1 km of 1 067 mm pipeline loop, two aftercoolers, and manifolding at five stations.

Views of the Board

The Board accepts TransCanada's explanation of the role that OPTO played in designing the proposed facilities, and encourages TransCanada to continue in its efforts to provide transparency in respect of its design process in future facilities applications.

4.2.2 Capability Factor and Adjustments to Simulation Model

TransCanada incorporated a five percent capacity reserve, or a 95 percent capability factor, to the design of its pipeline system to account for unscheduled outages, scheduled maintenance and other factors in both the summer and winter seasons. Although TransCanada provided data in its *Update to TransCanada PipeLines System Capability Estimates*, revised 19 July 1996, that would suggest a winter and summer season capability factor of 96 percent for the Western and Central Sections, TransCanada was of the view that it would be prudent to continue using a 95 percent capability factor. TransCanada indicated that it has an ongoing and possibly expanding pipeline maintenance program, and, because recent changes to its simulation data were extensive, TransCanada believed it would be prudent to ensure that simulated conditions using the new data accurately reflect actual operating conditions prior to changing the capability factor.

A portion of TransCanada's applied-for facilities are required to restore system capability following an updating of TransCanada's simulation data from its 1996-97 Facilities Application. The loss of capability includes a reduction of $850 10^3 \text{m}^3/\text{d}$ (30 MMcf/d) (average summer season) on the Western Section, $1 501 10^3 \text{m}^3/\text{d}$ (53 MMcf/d) (average summer season) on the Central Section, and $312 10^3 \text{m}^3/\text{d}$ (11 MMcf/d) (winter peak day with loss of most critical unit) on the North Bay Shortcut. The updated simulation data includes a new set of pipe roughnesses and heat transfer coefficients and a reduction in unit efficiencies on the North Bay Shortcut and the Iroquois Extension due to a change in operating conditions. TransCanada indicated that when the new coefficients were entered into its system simulation, the predicted conditions matched the actual conditions more closely than with the previous data. To restore the simulated capacities to the original design levels, TransCanada proposed to add one new unit at Station 9, aftercoolers at Stations 55 and 99, and 10.3 km of loop on the North Bay Shortcut (this loop was previously approved in GH-2-94). The estimated direct cost of these facilities is \$99.6 million.

In respect of its pipeline maintenance program, TransCanada submitted that additional capacity is required to maintain current intensive maintenance activities as it is becoming increasingly difficult to coordinate downtimes. Some of the initiatives included under TransCanada's intensive maintenance program include:

- implementation of the Stress Corrosion Cracking ("SCC") Management Program over the entire system
- increased SCC pig runs
- increase in corrosion remedial activities
- installation of launchers and receivers
- commencement of an intensive corrosion pigging program
- a Risk Reduction Pipe Replacement Program
- increased station and pipeline recoating

TransCanada indicated that secondary or non-critical maintenance was increasingly difficult to schedule and as a result was being deferred. Examples of secondary maintenance include dry gas seal upgrades, aero assembly changes, soak washes of gas turbines. Although TransCanada was unable to say whether the problem of deferred maintenance could be eliminated if a capability reserve of five percent was continued to be incorporated in its system design, it was certain that the five percent reserve would bring them much closer to eliminating maintenance deferral.

CAPP supported TransCanada's application but expressed concern that should an appropriate relationship between the design and the firmly contracted level of service and that, to the greatest extent practicable, what is built should be made available for firm contracting in order to keep the firm service toll as low as possible. CAPP considered it appropriate to monitor the utilization of TransCanada's system to test TransCanada's design assumptions and philosophy against actual results. CAPP indicated that this would require the development of some period of historical data to lay a foundation for ongoing monitoring in current and subsequent years and should involve a comparison of forecast or projected volumes with actual volumes moved by TransCanada. As an initial step to this undertaking, CAPP suggested that TransCanada should be directed to propose a monitoring format that would meet the desired objectives. This proposed format could be reviewed by the Tolls Task Force.

Consumers' addressed the issue of TransCanada's capability factor by focussing on the changes made by TransCanada to its simulation data and TransCanada's intended increase in the level of maintenance performed on its system. With regard to TransCanada's revised simulation data, Consumers' submitted that the portion of the capability excess on TransCanada's system, associated with possible data inaccuracies, will be in excess of TransCanada's requirements to the extent that the revised data prove to be accurate. Consumers' referred to this excess as a "capability cushion" and submitted that only time would tell if creating this excess was an appropriate decision.

Consumers' expressed the view that TransCanada had not formulated its plans with respect to its 1997-98 Contract Year maintenance program and, hence, could not understand how TransCanada's plans to increase its intensive pipeline maintenance program would impact on system capability in the 1997-98 Contract Year. Consumers' further indicated that it would have greater confidence in TransCanada's position, that all of the applied-for facilities are needed to meet its incremental FT service and maintain system reliability, if TransCanada could point to concrete evidence that would

link the need for a certain level of capability excess to TransCanada's future pipeline maintenance plans.

Consumers' summarized its position with respect to TransCanada's need for the applied-for facilities by indicating that this need is, to some extent, a matter of judgment and that it had no choice but to accept TransCanada's judgment in the context of the application. Consumers' further indicated that, at the time of TransCanada's next facilities application, it would examine whether TransCanada's assumptions regarding the level of flexibility needed is supported by actual experience.

TransCanada indicated that it would not oppose the Board setting a timeframe within which TransCanada would consider and develop a means to assemble useful baseline information and distribute it to the Board and interested parties. Consumers' further suggested that the timing of the availability of the first of what, presumably, would be a series of reports should be such that interested parties can assess the results prior to TransCanada's next facilities proceeding.

Views of the Board

The Board is of the view that the proposed facilities represent an appropriate design for the expansion of the TransCanada system at this time.

The Board finds that there is insufficient evidence in this proceeding to direct TransCanada to change the capability factor used in the design of its pipeline system from the current value of 95 percent.

The Board, however, is of the view that TransCanada should undertake to enhance the transparency of its design methodology. The Board directs TransCanada to develop, by no later than 1 March 1996, a monitoring and reporting mechanism which will enable parties to better understand how capacity is allocated on TransCanada's system and how this relates to theoretical capacity. The Board expects a consultative approach to be taken by TransCanada and supports CAPP's suggestion that the proposed format of this mechanism be considered by the Tolls Task Force.

As an interim measure, the Board directs TransCanada to provide in its future facilities applications, daily summaries commencing 1 December 1996, indicating volumes shipped by type of service, the capacities attributed to capability factor, and further indicating capacities ascribed to intensive maintenance, secondary maintenance, unplanned outages, and any excess capacity. This data should be provided for the Western Section, Central Section and North Bay Shortcut and compared, on a daily basis to the theoretical capacity on each section. Comments are to be included on a daily basis to explain any unusual operating conditions that may affect system capability.

4.3 Retirement of Compressors

In its application, TransCanada proposed to treat the retirement of twelve compressor units as "ordinary retirements" pursuant to section 39 of the *Gas Pipeline Uniform Accounting Regulations* ("GPUAR"). The units are described in Table 4-2:

Table 4-2
TransCanada's Proposed Compressor Unit Retirements

STATION	UNITS	MW/unit
Station 13 A Plant	1 to 3	2.7
Station 13 A Plant	4 & 5	2.5
Station 41 A Plant	1 to 5	1.9
Station 41 A Plant	6	2.5
Station 211 A Plant	1	3.2

TransCanada submitted the reasons for retirement of the compressor units at Stations 13 and 41 as being the advanced age and the number of hours of operation of the units. The units are more costly to operate and they also produce more NO_x emissions than modern units, both gas and electric. TransCanada also noted that the units at Station 41 have been the subject of several complaints regarding noise.

The A Plant compressor unit at Station 211 has not operated since the B Plant unit was installed in 1993. Parts from the A Plant unit have been used to service other units and considerable cost would be incurred to restore it and to install needed silencing equipment.

Views of the Board

The Board accepts TransCanada's rationale for retiring the compressor units identified in Table 4-2. In this regard, the Board believes that the retirement of these units falls within the guidelines set out under section 39 of the GPUAR.

Decision

The retirement of the compressor units identified in Table 4-2 may be treated as "ordinary retirements" pursuant to section 39 of the GPUAR.

4.4 TransCanada's Exemption Application

By letter dated 3 October 1996, revised 9 October 1996, TransCanada filed an application requesting that certain facilities, including certain base case facilities and the Winter Loop facilities, be exempt from the certificate conditions, referred to as "Release Conditions", which are typically included in a certificate issued to TransCanada following a facilities application. The facilities included in TransCanada's request for exemption from the Release Conditions are listed in Table 4-3.

The base case facilities are required to restore the simulated capabilities to original levels in order to meet base case requirements. Included in the base case is the 10.3 km Richmond Loop on the North Bay Shortcut. The Richmond Loop was previously approved by Board Order XG-T1-70-94, following the issuance of Certificate GC-87, subsequent to the GH-2-94 proceeding. The Winter Loop facilities will provide TransCanada with approximately $1\ 700\ 10^3\text{m}^3/\text{d}$ (60 MMcf/d) of additional firm capacity on the Central Section. This will be utilized, in part, by domestic shippers who have, or are expected to have, executed FT Service Contracts in the near future, leaving an unallocated volume of approximately $708\ 10^3\text{m}^3/\text{d}$ (25 MMcf/d). TransCanada expects that this unallocated capacity will be contracted prior to 1 November 1997, given the number of new firm shippers underpinning the 1997-98 Facilities Application.

The Release Conditions ensure that only firm transportation requirements underpin the construction of new facilities. The Release Conditions specify that TransCanada must file, prior to construction: information demonstrating that all necessary U.S. and Canadian federal regulatory authorizations applicable to new firm long-term export volumes have been granted; information demonstrating that, for new firm volumes on the TransCanada system, transportation service contracts have been executed, all necessary regulatory approvals have been granted for downstream facilities or transportation services, and gas supply contracts supporting the new firm volumes have been executed; and, requirements tables and flow schematics which identify any changes to TransCanada's base case requirements and the requirements related to the applied-for facilities.

Included in the Exemption Application was a request by TransCanada for an extension, to 31 October 1997, of the expiry date of Certificate GC-87 to allow construction of the Richmond Loop in the summer of 1997. TransCanada also requested that the Richmond Loop be exempted from the Release Conditions, which are Conditions 13 and 14 of Certificate GC-87. TransCanada further requested that the Board apply the conditions which may be attached to any certificate issued to TransCanada subsequent to GH-3-96 to the Richmond Loop and that only Conditions 7(c), 11 and 21(c) Certificate GC-87, which apply specifically to the Richmond Loop, be carried forward.

Table 4-3
Facilities Included in TransCanada's
Request for Exemption From Release Conditions

Pipeline Loop Facilities	Loop Name	Construction	Conditions
		Start Date	
MLV 1216 to MLV 1216 + 10.3 km ¹	Richmond	June 1997	13 and 14 ²
MLV 43 + 5.5 km to MLV 44 ³	Spruce	December 1996	12 and 13
MLV 62 to MLV 63 ³	Savanne	December 1996	12 and 13
MLV 77 to MLV 78 ³	Blackwater	December 1996	12 and 13
MLV 80 + 13.8 km to MLV 82 ³	Geraldton	December 1996	12 and 13
MLV 82 to MLV 83 ³	Longlac	December 1996	12 and 13
MLV 84 to MLV 84 + 17.1 km ³	Flynne Lake	December 1996	12 and 13
MLV 102 + 6.1 km to MLV 103 ³	Cochrane	December 1996	12 and 13
Compression Facilities			
Station 9E (28.3 MW) ¹		April 1997	12 and 13
Station 41F (28.3 MW) ³		April 1997	12 and 13
Aftercoolers at Station 41 ³		April 1997	12 and 13
Aftercooler at Station 55 ¹		July 1997	12 and 13
Aftercooler at Station 99 ¹		July 1997	12 and 13

Views of the Board

The Board is of the view that TransCanada's request for an exemption from the Release Conditions for the base case facilities and the Winter Loop facilities listed in Table 4-3 is reasonable. The Board has considered TransCanada's request that the expiry date of GC-87 be extended to 31 October 1997 and considers this also to be reasonable. An extension to the sunset clause has, therefore, been granted, as indicated in Amending Order AO-2-GC-87, included as Appendix III of these Reasons.

The Board does not, however, consider it appropriate to apply the conditions proposed in the GH-3-96 proceeding to the Richmond Loop. As this proposal was not raised by TransCanada until final argument in the GH-3-96 proceeding, parties were not given an opportunity to speak to the proposal. Therefore, it is the Board's view that TransCanada should adhere to the conditions of GC-87 in regard to the construction of the Richmond Loop, with the exception of Conditions 13 and 14 from which the Richmond Loop is exempted in accordance with Amending Order AO-2-GC-87.

¹Facilities required to serve base case requirements.

²Conditions included in GC-87 and approved in GH-2-94.

³ Winter Loop facilities.

Chapter 5

Land Use, Environmental and Socio-Economic Matters

5.1 Route Selection and Land Requirements

5.1.1 Route Selection

TransCanada has applied for a total of 205.5 km of line pipe, consisting of 10 loop sections in the provinces of Manitoba and Ontario.

Where new facilities could not be located on existing rights-of-way due to right-of-way constraints, TransCanada proposed that they be located adjacent to the existing rights-of-way provided that environmental, engineering, construction and safety concerns were met. All proposed loop sections are adjacent to existing TransCanada rights-of-way with the exception of deviations on the Sandilands, Savanne and Flynne Lake Loop sections.

5.1.2 Land Requirements

TransCanada provided the rationale for its specific land requirements and for each loop location. The location, length and land requirements for each loop section are found in Table 5-1.

Station Facilities (Fee Simple)

TransCanada submitted that all of the compressor additions would be constructed on lands owned in fee simple by TransCanada with the exception of Compressor Stations 52, 88 and 102.

The additional lands required at Compressor Stations 52, 88 and 102 are required to accommodate new facilities (an electrical sub-station at Compressor Station 52 and Plant C at Stations 88 and 102) that will be located outside the current limits of the station properties.

At Compressor Station 41, additional property will be acquired to expand the area of buffer lands that surround the station facilities. The acquisition will enable TransCanada to ensure that the lands remain in agricultural use and to prevent land use changes that would be incompatible with the day-to-day operations of the station.

Easements

TransCanada requires easements ranging in width from 5 to 42.6 m along the proposed loop sections.

Temporary Work Space

TransCanada requires from 10 to 15 m of temporary work space for machinery movement, the storage of topsoil and subsoil, and to ensure that no environmental or landowner interests are compromised

Table 5-1
TransCanada's Proposed 1997-98 Facilities Land Requirements

Loop Description	Loop Section	Length (km)	Permanent Width (m)	Easement Length (km)	Temporary Width (m)	Work Space Length (km)
Manitoba 3rd Loop						
MLV 43+5.5 km to MLV 44	Sandilands	20.4	5.0/30.0	18.4	10.0	17.1
Ontario 3rd Loop						
MLV 62 to MLV 63	Savanne	29.8	10.0/30.0	29.9	10.0	25.6
MLV 77 to MLV 78	Blackwater	14.0	10.0/30.0	13.5	10.0	13.2
MLV 80+13.8 km to MLV 82	Geraldton	3.1	15.0	3.1	10.0	3.1
MLV 82 to MLV 83	Longlac	30.7	10.0/30.0	30.56	10.0	30.3
MLV 84 to MLV 84+17.1 km	Flynne Lake	17.1	10.0/30.0	17.1	10.0	16.5
MLV 102+6.1 km to MLV 103	Cochrane	23.2	5.0/15.24	3.0	10.0/15.0	23.2
MLV 110 to MLV 111	Latchford	32.0	10.0/27.432	30.1	10.0	29.7
MLV 112 to MLV 114	Marten River	19.1	10.0/42.672	18.0	10.0/15.0	18.2
Ontario 1st Loop						
MLV 1219 to MLV 1219+16.1 km	Winchester	16.1	10	16.1	20	16.1
Total		205.5		179.76		193.0

during construction. This is in accordance with TransCanada's Pipeline Construction Specifications (1993). Temporary work space in excess of 15 m may be required in areas where adverse conditions exist. Such areas include wetlands, rolling terrain and major river crossings.

5.1.3 Deviations

Sandilands Loop

Along the proposed Sandilands Loop there is a large tree nursery operation. The Pineland Forest Nursery is located adjacent to existing pipeline facilities in the vicinity of MLV 43 + 19.7 km to MLV 43 + 20.3 km. As the proposed line paralleling existing facilities would likely cause substantial disturbance to the tree nursery seedbeds and greenhouses, a deviation to the north of existing facilities was originally considered. The deviation originally proposed was located immediately south of the Trans Canada Highway. During the Early Public Notification Process the operations of the Pineland Forest Nursery identified concern associated with the proposed route due to potential impacts on its operations. TransCanada's consultant's report provides an assessment of the most suitable route deviation with respect to constructability, landowner and environmental considerations. The proposed route deviation would be constructed within a new 30 m permanent easement for construction and pipeline maintenance.

Savanne Loop

To avoid the area of the Little Savanne River, a high use tourist resort, a route deviation has been proposed from MLV 62 + 20.9 km to MLV 62 + 24.9 km.

Flynne Lake Loop

A route deviation is proposed between MLV 84 + 10 km to MLV 84 + 10.6 km to traverse Flynne Lake.

Views of the Board

The Board agrees with TransCanada's rationale for installing the proposed new looping facilities either within existing easements or adjacent to existing easements with associated temporary work space. The general routes proposed by TransCanada for those loop sections are acceptable to the Board including the deviations on the Sandilands, Savanne and Flynne Lake Loop sections.

Because of the potential impacts on affected landowners, the amount of land (whether acquired as fee simple lands, easements, or temporary work space) required for pipeline construction is of concern to the Board. The Board finds that TransCanada's anticipated requirements for fee simple lands, easements and temporary work space are reasonable and justified.

5.1.4 Requirements of the Act in Respect of the Routing of New Pipeline Facilities

If the Board is satisfied with the proposed general route of a particular pipeline loop section and issues a certificate in respect of it, the pipeline company must submit to the Board, prior to commencement

of construction, plans, profiles and books of reference ("PPBR") which, among other things, lay out the detailed route of the pipeline segment.

In its application, TransCanada requested that the applied-for facilities be exempted, pursuant to section 58 of the Act, from the provisions of subsections 31(c) and 31(d) and section 33 thereof. Such exemptions would relieve TransCanada from the necessity of filing a PPBR for Board approval.

Views of the Board

In deciding whether or not to exempt TransCanada from the provisions of subsections 31(c) and 31(d) and section 33 of the Act, the Board is mindful of the rights of adjacent landowners who might be affected by the proposed construction. The Board is of the opinion that, due to the proposed location of the facilities (on existing easements or new easements adjacent thereto), it is unlikely that those landowners would be adversely affected in the long-term by the proposed construction.

The Board is mindful that landowners, whose property TransCanada proposes to acquire, have their rights under the Act protected. However, the Board is also aware of the potential problems for TransCanada if it is unable to obtain all the necessary land rights. Therefore, the Board is prepared to grant the requested exemptions subject to a condition which will permit construction to commence only if TransCanada has obtained all required land rights along any specific loop section or, if the land rights have not yet been obtained, has demonstrated that the landowner rights prescribed in the Act will not be prejudiced. The Board is of the opinion that the wording of the condition proposed by TransCanada, and included in Appendix II of these Reasons, protects the rights of landowners while allowing TransCanada flexibility in proceeding with the right-of-entry process.

Decision

The Board will grant TransCanada an exemption from the provisions of subsections 31(c) and 31(d) and section 33 of the Act subject to the exemption order condition listed in Appendix II of these Reasons.

5.2 Environmental Matters

5.2.1 Environmental Screening Report

The Board completed an Environmental Screening Report pursuant to the CEAA and the Board's own regulatory process. The Board circulated the Screening Report to those federal agencies that had provided specialist advice on the proposed facilities, to those parties requesting a copy, and to the applicant.

The Board has considered the Environmental Screening Report and comments received on the report in accordance with Hearing GH-3-96 and is of the view that, taking into account the implementation of the proposed mitigative measures and those set out in the attached conditions, TransCanada's 1997-98 Facilities proposal is not likely to cause significant adverse environmental effects. This represents a decision pursuant to paragraph 20(1)(a) of the CEAA.

The comments received, and the Board's views, have been added to the Environmental Screening Report as Appendices I and II of the Screening Report respectively. Copies of the Board's Environmental Screening Report are available upon request from the Board's Regulatory Support Office.

5.2.2 Certificate Conditions

The Ontario Ministry of Environment and Energy ("MOEE") on behalf of the Ontario Pipeline Coordination Committee ("OPCC") submitted a series of proposed undertakings for environmental protection related to those facilities to be constructed in Ontario. TransCanada agreed to the undertakings as part of the GH-3-96 proceeding. The MOEE and TransCanada both requested that the list of undertakings be included in the Board's certificate conditions. Conditions related to the OPCC undertakings are included as certificate Condition 4, Appendix II.

The Board notes, in respect of undertakings between TransCanada and the OPCC, that an undertaking made between parties is an agreement not involving the Board. Where the public interest is served, however, the Board may reference the subject matter of such undertakings in conditions to a Board issued certificate.

5.3 Socio-Economic Matters

5.3.1 Noise

TransCanada submitted that its *Noise Management Guidelines* require that new compression facilities be designed so that under normal operating conditions, noise emissions will not exceed the higher of: (a) the stations' property line noise levels (without the additional compression); or (b) the applicable federal, provincial, and/or municipal noise control by-laws/guidelines.

TransCanada submitted that it has received complaints related to noise emissions at Stations 41, 123, and 211. TransCanada provided a discussion of the noise complaints received including a summary of comments, an identification of all possible sources of noise that may be the cause of, or contribute to the complaints, and a summary of the measures that TransCanada has undertaken, or will undertake, to resolve the complaints identified by area residents. TransCanada indicated that it has successfully resolved all concerns with the exception of those expressed by the residents in the vicinity of Station 41.

Mr. Denis Gauthier from the Town of Île des Chênes presented a petition to the Board with the names of 22 residents concerned with the noise and vibration levels on their property. The petitioners were opposed to the expansion of Station 41 unless their concerns were properly addressed. During the hearing, Mr. Gauthier questioned TransCanada to ensure that everything that could be done by TransCanada to reduce noise levels to the acceptance of the community would be done as part of the application. Mr. Gauthier submitted that TransCanada should be required to commit to meeting a noise level of less than 45 decibels ("dBA") at its southern property line. Mr. Gauthier noted that 45 dBA would be in accordance with the Maximum Desirable nighttime level specified by the Province of Manitoba's *Guidelines for Sound Pollution*. Mr. Gauthier claimed that this level would be reasonable given that sound levels would vary according to prevailing wind speed and direction. Mr. Gauthier further requested that TransCanada should be required to hire an independent consultant

to conduct a thorough study to identify all sources of noise at Station 41, and to provide potential recommendations or solutions to attenuate noise to meet the 45 dBA limit.

TransCanada acknowledged that noise at Station 41 has become a concern due to the expansion of the station and the encroachment of the neighbouring community of Île des Chênes. TransCanada submitted that it has been responsive to the concerns expressed by the residents and has commenced an intensive program of noise attenuation. TransCanada noted that its noise attenuation program has included new combustion air intake filters and acoustic insulation on above grade high pressure piping, valves, and supports, on B, C, and D Plants, acoustic insulation on E Plant strainer support and sensing lines, and the installation of blow-off silencers on A Plant unit vents. TransCanada further noted that it would be replacing the exhaust silencers on B, C, and D Plants in 1997. TransCanada concluded that with the installation of the proposed F and G Plants, and with the proposed retirement of A Plant, the noise levels at Station 41 would fall below the 50 dBA Maximum Acceptable level at the station's southern property line. TransCanada submitted that A Plant is one of the primary contributors to the existing noise levels, and as a consequence of the proposed expansion, A Plant would be retired. TransCanada expected that upon the retirement of A Plant, noise levels from the station should be within the 45 dBA limit at the southern boundary of the station.

With respect to Mr. Gauthier's first request, to have TransCanada commit to a 45 dBA limit, TransCanada expressed the view that this matter should be considered following the post-construction study of noise levels and further consultation with town residents. TransCanada noted that although it is designing to meet the 45 dBA limit, due to a number of design uncertainties and noise emissions from existing facilities at Station 41, TransCanada could only commit to a limit of 50 dBA.

With respect to Mr. Gauthier's second request, to hire a consultant to identify further methods of noise attenuation, TransCanada stated that, while it considers the effort to be somewhat duplicative, it would agree to the noise study in the interests of goodwill with its neighbours. TransCanada noted, however, that post-construction ambient noise surveys and further consultation with landowners may provide enough direction to determine whether further mitigation would be required. TransCanada concluded that this request should be considered following the post-construction study of noise levels, as well as further consultation with area residents.

In response to questions from the Board, TransCanada undertook to file, with the Board, noise surveys to confirm that post construction ambient noise levels would be in accordance with the sound levels as predicted within TransCanada's assessments. TransCanada also undertook to provide the Board with a status report on noise complaints received for a period of one year after the commissioning of new compression facilities proposed within the application.

Views of the Board

The Board notes that, based upon evidence provided by TransCanada, noise levels at the southern property line would approximate 45 dBA following the expansion of the station and the retirement of A Plant. The Board further notes that TransCanada has submitted that A Plant is one of the primary contributors to the existing noise levels from Station 41 and that the direct consequence of TransCanada proceeding with the proposed expansion would be the retirement of A Plant.

The Board is of the view that the retirement of A Plant, subsequent to the commission of the applied-for facilities at Station 41, is an appropriate solution to reduce ongoing noise levels. The Board is also of the view that, based upon the evidence provided by TransCanada, Mr. Gauthier's request to have TransCanada commit to a noise level of 45 dBA or less at its southern property line is both reasonable and attainable. The Board therefore expects TransCanada, upon the commissioning of the applied-for facilities and the retirement of A Plant at Station 41, to limit ongoing noise levels to 45 dBA at its southern property line.

The Board sees merit in TransCanada's view that a comprehensive noise study may be premature prior to the construction of the applied-for facilities and the post-construction noise surveys. Given the number of design uncertainties, and the somewhat problematic nature of noise level prediction, a study prior to the installation of the applied-for facilities and the decommissioning of A Plant may be based upon dated assumptions and might provide information that may not be relevant to the planned operating scenario. The Board notes that, should TransCanada's predicted noise levels be confirmed by the post-construction noise survey, the requirement for a comprehensive noise study would be redundant. The Board therefore concurs with TransCanada's view that a comprehensive noise study prior to the post-construction noise surveys would be premature. The Board expects, however, that, should the post-construction noise survey indicate that noise levels are in excess of 45 dBA, TransCanada would undertake the study necessary to determine the means by which the noise level objective may be achieved.

Chapter 6

Economic Feasibility

The Board examines the economic feasibility of facilities by assessing the likelihood that the facilities will be used at a reasonable level over their economic life, and by determining whether the firm services demand charges will be paid. In the course of its examination, the Board considers several supply, market and contractual factors, all of which were addressed in TransCanada's evidence.

TransCanada submitted a report by Sproule, entitled *The Future Natural Gas Supply Capability for the Province of Alberta and the Western Canada Sedimentary Basin 1995-2017*, which concluded that there will likely be a sufficient long-term gas supply to keep the pipeline, including the subject facilities, utilized at a reasonable level over its economic life.

TransCanada projected that gas demand in Manitoba, Ontario and Québec will grow at an average annual rate of 2.1 percent over the forecast period 1994 to 2010. TransCanada estimated that gas demand in Ontario and Québec will exceed contracted pipeline requirements by some $7.3 \cdot 10^9 \text{ m}^3$ (256 Bcf) in 2005, requiring the construction of additional pipeline capacity beyond that applied for and/or additional gas imports.

To demonstrate the long-term nature of gas demand in the U.S. Midwest and U.S. Northeast markets served by its pipeline system, TransCanada presented several long-term gas demand forecasts which showed that annual growth rates, over the forecast period 1995 to 2010, will range between 0.51 and 0.85 percent in the U.S. Midwest and between 0.56 and 1.53 percent in the U.S. Northeast.

TransCanada and its expansion shippers provided evidence indicating that, for the new firm transportation service contracts underpinning the expansion: the transportation demand charges will be paid; there is adequate gas supply; upstream and downstream transportation arrangements are or will be in place; all regulatory approvals have or will be obtained; and, long-term demand exists.

TransCanada anticipated that the toll impact resulting from the expansion would be minimal and would have no material impact on the demand for its services.

Views of the Board

The Board is satisfied that the evidence demonstrates that the applied-for facilities are economically feasible, given the existence of long-term gas supply and demand, that there is a strong likelihood that the facilities will be used at a reasonable level over their economic life, and that the demand charges will be paid.

The Board is also satisfied that the certificate conditions described in Appendix II will ensure that all necessary gas supply and transportation service contracts and regulatory approvals will be in place prior to the commencement of construction of the applied-for facilities.

Chapter 7

Renaissance Energy Ltd.'s Section 71 Application

By application dated 14 May 1996, Renaissance applied to the Board, pursuant to subsections 71(3) and 71(2) of the NEB Act for orders of the Board requiring TransCanada:

- (a) to provide adequate and suitable facilities for Renaissance to transport up to 145.0 $10^3\text{m}^3/\text{d}$ (5.1 MMcf/d) from Empress, Alberta to Emerson, Manitoba, commencing 1 September 1997; and
- (b) to receive, transport, and deliver gas offered by Renaissance to TransCanada.

Renaissance's original request, dated 30 November 1995, for a ten-year term was not included in TransCanada's 1997-98 Facilities Application because TransCanada was not satisfied that Renaissance had demonstrated the existence of both long-term downstream take-away arrangements and markets. TransCanada was concerned that the Board may place it at risk for lost revenues due to any failure by Renaissance to access downstream arrangements.

Renaissance submitted that the gas to be transported would be used by the Winnipeg Division of Rogers Sugar to process sugar beets, for about five or six months out of the year (September to February). Renaissance and Rogers Sugar have entered into an amended five-year gas supply agreement commencing 1 September 1997. During the remaining months, referred to as the non-campaign period, Renaissance indicated that it hopes to utilize the TransCanada firm service capacity to deliver gas to Emerson to supply short-term export markets. Renaissance has entered into a gas supply arrangement with its subsidiary, REI, for the period 31 October 1997 to 1 November 2007, to supply 145 $10^3\text{m}^3/\text{d}$ (5.1 MMcf/d) of gas.

Renaissance holds firm service agreements for the requisite upstream capacity on NOVA. Downstream transportation will be provided by currently available interruptible service on Centra Manitoba for domestic deliveries to Rogers Sugar and by Great Lakes and/or Viking on a short-term basis for export deliveries. REI will be responsible for obtaining U.S. pipeline capacity. With regard to Great Lakes capacity, REI relies on capacity held by its customers and on released or interruptible capacity. REI currently utilizes monthly interruptible transportation on Viking. Accordingly, firm service capacity has not been contracted for on Centra Manitoba, Great Lakes or Viking.

Renaissance's corporate supply pool will be utilized, under a corporate warranty, to meet the required volume. No reserves will be dedicated by Renaissance to Rogers Sugar. A summary of Renaissance's corporate supply pool was submitted together with a corporate supply and demand balance indicating sufficient supply is available to meet projected annual requirements.

Renaissance believed that it had demonstrated the existence of long-term markets and that it would be punitive for it to contract and pay for Great Lakes firm capacity when such capacity would only be used for six to seven months of the year. Renaissance advised TransCanada that it is prepared to

provide such financial assurances as may reasonably be required by TransCanada to protect it from the risk of default on Renaissance's demand charge obligations.

Renaissance submitted that it would be appropriate for the Board to consider its application in TransCanada's 1997-98 Facilities Application. By letter dated 23 May 1996, after examining Renaissance's request for approval, the Board decided to refer Renaissance's section 71 application to the GH-3-96 proceeding.

Renaissance indicated that TransCanada's prevailing requirements concerning evidence of downstream transportation arrangements do not explicitly stipulate the term and type of transportation arrangements (firm or interruptible) which must be demonstrated. Renaissance pointed out that, in the past, TransCanada has demonstrated that it has the ability to be flexible as it has accepted evidence of interruptible arrangements on the downstream pipeline and it has also accepted a term of service on the downstream pipeline less than the term of the TransCanada contract.

Renaissance conceded that it does not have firm capacity on the Great Lakes system for the portion of the year that Rogers Sugar does not require gas, as Great Lakes does not offer six-month firm service. However, Renaissance stated that this does not mean it will be unable to move its gas to U.S. markets during the Rogers Sugar non-campaign periods. Renaissance indicated that it is very familiar with the transportation situation on Great Lakes. Renaissance submitted that if it were not confident of being able to make the necessary downstream transportation arrangements when it needed to, then it would not have entered into the arrangement that it has with Rogers Sugar.

Renaissance further submitted that the circumstances surrounding its application are unique and that TransCanada's policies should be applied in recognition of those unique circumstances. To support this, Renaissance concluded that the Winnipeg facility has unusual gas requirements and suggested that the likelihood of encountering a Canadian industrial consumer who requires a firm gas supply for six months a year, who is situated in an area where there are few markets for the gas during the remainder of the year, and who is close to the international border and, to an interconnecting U.S. pipeline, is very low. Renaissance stressed that it was not applying for transportation to Emerson, in order to serve a year-round export market, but was applying for transportation to Emerson in order to allow it to serve, in a cost-effective manner, the needs of a domestic market. Renaissance argued that it was unreasonable, under these circumstances, for TransCanada to require Renaissance to demonstrate the same long-term firm, downstream capacity as is required from shippers serving long-term export markets.

In an effort to try and accommodate Renaissance's service request, TransCanada had offered firm service from Empress, Alberta to the Manitoba Delivery Area, with access to Emerson, Manitoba via a diversion. However, Renaissance found this offer to be unacceptable as TransCanada could not guarantee the reliability of the diversion to Emerson.

Renaissance acknowledged that, if TransCanada's capacity exceeds downstream take-away capacity, some of TransCanada's capacity will be underutilized. However, Renaissance noted that TransCanada has confirmed that it will have excess capacity to Emerson if the applied-for facilities are approved by the Board. As a result, Renaissance contended that it will not be creating any mismatch as a mismatch will already exist. Renaissance stated that it will actually be helping to allay TransCanada's concern by making deliveries to Rogers Sugar at Winnipeg for six months a year, during which period the

remainder of the Emerson Shippers will have access to 145.0 $10^3\text{m}^3/\text{d}$ (5.1 MMcf/d) more capacity on the Great Lakes system.

Renaissance also pointed out that its required volume is only 145.0 $10^3\text{m}^3/\text{d}$ (5.1 MMcf/d). TransCanada has acknowledged that it would not be able to match upstream and downstream capacity to that degree.

Renaissance contended that Rogers Sugar, and the sugar industry in Manitoba, would benefit if the Board were to grant this application as Rogers Sugar would gain the economic benefits of more economically-priced gas.

Finally, Renaissance stated that this project is a unique situation and would have no precedential value. Renaissance submitted that the issue of precedential value is really the essence of TransCanada's concern. Renaissance urged the Board to consider its request on its own merits and leave the bigger issues such as the upstream and downstream matching principle and TransCanada's related Tariff and Queuing Procedures for another day.

TransCanada submitted that if the Board were to approve the section 71 application, it should do so having found that the case is unique and that the principle of TransCanada requiring assurance of downstream take-away capacity should be upheld. TransCanada further submitted that the approval should be treated as an exception and not be construed as a precedent for interpretation of the current tariff regarding the requirement that there be assurance of matching take-away capacity on downstream pipeline systems. TransCanada stated its concern regarding the impact of including Renaissance's request in the facilities application, as the Queuing Procedures would be ignored. TransCanada argued that history has shown that once rules and guidelines are relaxed it is only a matter of time before another "unique" project appears which may also request similar relaxation to accommodate its particular case. TransCanada submitted that, if the Renaissance request is approved, it would amount to preferential treatment relative to other shippers in the facilities application that did meet the requirements for inclusion.

TransCanada stated that it did not dispute the historical information that had been filed regarding Renaissance's ability to access release capacity on the Great Lakes system. TransCanada contended that there is not adequate assurance that the availability of such capacity will be sufficiently assured over the ten-year life of the FT contract that Renaissance is asking for, or that Renaissance will consistently be the winning Great Lakes service bidder. TransCanada also stressed its concern about the possibility of building redundant capacity to the Great Lakes interconnect without a matching increase in the downstream capacity. According to TransCanada, this would increase the likelihood of having more capacity going to, than leaving, Emerson. In such circumstances, TransCanada submitted, there is the potential that Renaissance would displace existing Canadian gas sales to that point, leading to underutilization of TransCanada's facilities. TransCanada also indicated that the risk of displacement of existing Canadian volumes also exists in situations where Renaissance is successful in obtaining released capacity on Great Lakes, if a displaced shipper is not able to access another point on the system via a diversion. TransCanada conceded that it is the relatively small volume in this case that tends to minimize this concern and that it is not unreasonable to mismatch upstream and downstream capacity by 142 $10^3\text{m}^3/\text{d}$ (5.0 MMcf/d).

TransCanada submitted that the Great Lakes system is extremely tight and TransCanada does not expect interruptible transportation to be available on the Great Lakes system, particularly in the initial year of the term.

TransCanada indicated that, assuming the applied-for facilities are to be approved, sufficient system excess to accommodate Renaissance's request would apply to 1997-98 only and that, at this point, it could not determine whether additional facilities in the future would be required.

None of the other shippers objected to Renaissance's section 71 application. Manitoba's Economic Development Board Secretariat supported Renaissance's request and indicated that approving the application would assist Rogers Sugar and allow the sugar industry to remain viable.

CAPP submitted that the Renaissance application should be granted based on the facts of the case. CAPP further submitted that the broader issues which concern TransCanada can and will be addressed at another time.

Views of the Board

The Board is of the view that TransCanada acted in accordance with its Tariff in assessing Renaissance's request for service to Emerson, Manitoba. The Board notes that Renaissance was unable to demonstrate the existence of long-term firm downstream transportation. As expressed in past decisions including GH-5-89 and GH-4-91, the Board continues to believe that TransCanada is in the best position to assess the risks associated with the individual projects underpinning an expansion of its facilities and, in particular, to determine the risk associated with the recovery of demand charges. The Board continues to believe that TransCanada should have the discretion to determine whether there is reasonable expectation of a long-term requirement for capacity expansion.

The Board, however, notes that potential shippers, believing that a strict application of the Tariff results in undue hardship, may always approach the Board to review the actions of TransCanada. Where the Board considers that the public interest is best served by a different interpretation of the Tariff, it may intervene. Such a decision by the Board will generally be made on a case-by-case basis upon examination of all relevant factors including, without limitation, the nature of the specific service request, the impact of the request on the existing system and shippers, the risk of under-utilized facilities, the cost of providing the service, and the likelihood of the Board receiving a large number of similar requests. In appropriate circumstances and at its discretion, the Board will grant the request that would not have precedential value.

The Board acknowledges TransCanada's concern regarding the possibility of building redundant capacity to the Great Lakes interconnect without a matching increase in the downstream capacity. According to TransCanada, this would increase the likelihood of displacing existing gas sales, leading to underutilization of TransCanada's facilities. The risk of displacement of existing volumes also exists if a shipper is successful in obtaining released capacity on the Great Lakes system, as a displaced shipper may be unable to access another point on the system via a diversion.

The Board notes that the relatively small volume in this case tends to minimize the concern related to the principle of matching upstream to downstream capacity, as TransCanada is unable to match volumes to such a degree.

The Board also notes that TransCanada was not opposed to Renaissance's request for FT transportation service, to the extent that it is a unique case and that the principle of TransCanada requiring assurance of downstream take-away capacity is upheld. The Board acknowledges Renaissance's argument that this project is a unique situation. In addition, the Board agrees that the likelihood of encountering a project which is similar in nature to the Renaissance project is low.

The Board has also taken into consideration the following facts: Renaissance has advised TransCanada that it is prepared to provide such financial assurances as may reasonably be required by TransCanada to protect it from the risk of default on Renaissance's demand charge obligations; the volume in question is small and the risk of related displacement is minimal; Renaissance is one of Canada's top producers and is an experienced shipper and marketer; no party opposed the application; and, Renaissance applied for transportation to Emerson, Manitoba in order to allow it to serve, in a cost-effective manner, the needs of a domestic market. The Board is also of the view that approval of Renaissance's application would benefit Rogers Sugar and the sugar industry and, thus, is in the public interest.

Decision

The Board approves Renaissance's application, pursuant to subsection 71(2) of the NEB Act, contingent upon Governor in Council approval of the issuance of a certificate. The Board directs TransCanada to receive, transport and deliver gas offered by Renaissance to TransCanada of up to 145.0 $10^3 \text{m}^3/\text{d}$ (5.1 MMcf/d) from Empress, Alberta to Emerson, Manitoba, commencing 1 November 1997 in accordance with the existing FT Toll Schedule. An order will be issued by the Board subsequent to Governor in Council approval of the issuance of a certificate in respect of TransCanada's 1997-98 Facilities Application.

However, the Board wishes to stress that it will review every application on a case-by-case basis. The granting of this section 71 application is an exception and should not be construed as a precedent for interpretation of TransCanada's *Transportation Tariff*, including the *Queuing Procedures*, or the Board's *Guidelines For Filing Requirements* regarding the requirement that upstream and downstream capacity should mirror TransCanada's transportation service contracts. In addition, the granting of this section 71 order does not suggest that capacity release provisions on U.S. pipelines will necessarily constitute satisfactory evidence of downstream take-away capacity.

The Board encourages parties to address the broader issues of the upstream and downstream matching principle and TransCanada's related *Transportation Tariff* and *Queuing Procedures*.

As TransCanada has confirmed that no facilities, beyond those already proposed by TransCanada, are required for 1997-98 to accommodate Renaissance's transportation request, it is not necessary for the Board to order TransCanada, pursuant to subsection 71(3) of the NEB Act, to provide adequate and suitable facilities for Renaissance.

Chapter 8

Disposition

The foregoing Chapters constitute our Decisions and Reasons for Decision in respect of the applications heard before the Board in the GH-3-96 proceeding.

TransCanada's Section 52, 58 and Exemption Applications

The Board has found that the facilities proposed by TransCanada are required by the present and future public convenience and necessity. Therefore, the Board will recommend to the Governor in Council that a certificate be issued. The certificate will be subject to the conditions outlined in Appendix II with the exception of those facilities, listed in Table 4-3, which are exempt from Conditions 12 and 13.

The Richmond Loop, also included in Table 4-3 as a base case requirement, is exempt from Conditions 13 and 14 of Certificate GC-87 in accordance with Amending Order AO-2-GC-87, included as Appendix III of these Reasons. Furthermore, pursuant to Condition 24 of Certificate GC-87, the expiry date for the commencement of construction of the Richmond Loop is extended to 31 October 1997, also in accordance with Amending Order AO-2-GC-87.

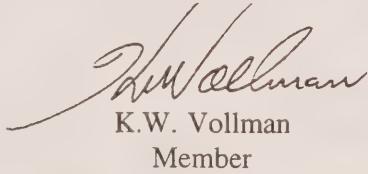
Upon issuance of a certificate, the Board will exempt the applied-for facilities, pursuant to section 58 of the Act, from subsections 31(c), and 31(d), and sections 33 and 47 of the Act subject to the exemption order condition included at the end of Appendix II of these Reasons.

Renaissance's Section 71 Application

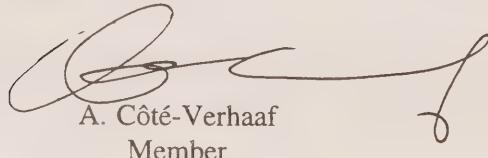
The Board has found it to be in the public interest to require TransCanada to receive, transport and deliver up to 145.0 $10^3 \text{m}^3/\text{d}$ of gas offered by Renaissance, as described further in Renaissance's application. Upon issuance of a certificate, the Board will issue an order, pursuant to subsection 71(2) of the Act, directing TransCanada to provide the requested service.



J.A. Snider
Presiding Member



K.W. Vollman
Member



A. Côté-Verhaaf
Member

Appendix I

List of Issues

1. The economic feasibility of the proposed facilities.
2. The appropriateness of the design of the proposed facilities.
3. The safety of the design and operation of the proposed facilities.
4. Whether the retirement of the compressor units, as proposed in TransCanada's Application Binder, Tab Facilities, Subtab 2, Item 7.0, page 21 should be treated as "ordinary" under the *Gas Pipeline Uniform Accounting Regulations* ("GPUAR").
5. The potentially adverse environmental and socio-economic effects of the proposed facilities, including those factors outlined in section 16 of the *Canadian Environmental Assessment Act*.
6. The appropriateness of the route selection, land requirements and the land rights acquisition process.
7. The adequacy of the public notification process.
8. The appropriate terms and conditions to be included in any approval which may be granted.
9. Whether the Board should grant approval to the application dated 14 May 1996 by Renaissance Energy Ltd. ("Renaissance") pursuant to subsections 71(2) and 71(3) of the *National Energy Board Act* to direct TransCanada Pipelines Limited to construct additional facilities and transport gas for Renaissance.
10. Whether the Board should grant approval to the application dated 15 August 1996 by PanCanadian Petroleum Limited ("PanCanadian") pursuant to subsections 71(2) and 71(3) of the *National Energy Board Act* to direct TransCanada Pipelines Limited to construct additional facilities and transport gas for PanCanadian.

Appendix II

Certificate Conditions

1. The pipeline facilities in respect of which this certificate is issued shall be the property of and shall be operated by TransCanada.
2. Unless the Board otherwise directs:
 - (a) TransCanada shall cause the approved facilities to be designed, manufactured, located, constructed and installed in accordance with those specifications, drawings and other information or data set forth in its application, or as otherwise adduced in evidence before the Board, except as varied in accordance with subsection (b) hereof; and
 - (b) TransCanada shall cause no variation to be made to the specifications, drawings or other information or data referred to in subsection (a) without the prior approval of the Board.
3. Unless the Board otherwise directs, TransCanada shall implement or cause to be implemented all of the policies, practices, recommendations and procedures for the protection of the environment included in or referred to in its application or as otherwise adduced in evidence through the application process.
4. Unless the Board otherwise directs, for the facilities to be constructed in Ontario:
 - (a) TransCanada shall, for construction, work or activities outside of the TransCanada Right-of-Way and temporary work areas TransCanada shall, following consultation with the local Ontario Ministry of Natural Resources ("OMNR") District Manager or designate, obtain and adhere to all authorizations required by OMNR. These authorizations may be in the form of work permits and may apply to all construction, work or activities on Crown Land including activities such as the construction of access roads, aggregate removal and removal of timber.

TransCanada shall apply for such authorization no later than thirty days prior to the time of the proposed construction, work or activity. If authorization is not granted within thirty days TransCanada may apply for authorization from the National Energy Board ("NEB").

TransCanada shall also advise parties undertaking construction, work or activities outside of the TransCanada Right-of-Way and temporary work area associated with TransCanada facilities to obtain any necessary OMNR authorization for activities (eg. access roads, aggregate sources) as early as possible prior to proceeding with any construction, works or activities.

Note: for the cutting of any Crown timber inside the right of way and temporary work areas, TransCanada shall apply for the appropriate District Cutting License ("DCL") no later than thirty days prior to the time of proposed construction, work or activity.

(b) for all proposed crossings of watercourses or waterbodies which appear on at least 1:50,000 National Topographic Service ("NTS") maps, TransCanada shall provide to the local OMNR District Manager or designate no later than thirty days prior to the time of the proposed construction of the watercrossing (unless OMNR determines such information is not required) the following:

- (i) a list of all pipeline watercourse crossings and the method of each crossing;
- (ii) a list of all temporary vehicle water crossings;
- (iii) a map identifying all water crossings by TransCanada's MLV and watercourse name;
- (iv) a fisheries assessment;
- (v) for dry water crossings, site specific information such as flows and flume sizes and locations, as appropriate to supplement typical drawings; and
- (vi) for vehicle crossings, the length and span of bridges, the length and diameter of culverts and location of fords, as appropriate to supplement typical drawings; this information will be provided at a later date, and prior to the commencement of construction.

(c) should the method of and mitigation associated with a proposed water crossing or other proposed construction, work or activity not be to OMNR's satisfaction, the proposed water crossing, construction, work or activity will not proceed until OMNR's concerns that are brought to TransCanada's attention within fourteen days after receipt of the information provided in accordance with Conditions 4(a), (b) and (e) are satisfactorily addressed.

(d) TransCanada shall adhere to the Ontario Generic Sediment Control Plans prepared by OMNR, February 1992 (Revised Feb. 1993), and as amended from time to time in consultation with TransCanada, for the construction, use and removal of dry flume water crossings, dam and pump water crossings and temporary vehicle water crossings for all water crossings of water courses and waterbodies which appear on at least 1:50,000 NTS maps, unless OMNR determines that site specific detailed plans of construction and sediment control are required.

TransCanada shall adhere to standard TransCanada procedures including the Environmental Management Handbook, for pipeline and vehicle water crossings of watercourses or waterbodies which do not appear on at least 1:50,000 NTS maps, unless OMNR determines that the plans noted above or site specific detailed plans of construction and sediment control are appropriate for specific water crossings and advises TransCanada ten days prior to construction of the water crossing.

(e) for each "wet" pipeline and permanent vehicle crossing of a watercourse or of a waterbody which appears on at least 1:50,000 NTS maps TransCanada shall submit to the OMNR District Manager or designate, no later than twenty-one days prior to the

time of proposed construction of the water crossing, site specific detailed plans of construction and sediment control unless OMNR determines typical drawings would be sufficient. These plans shall be in accordance with OMNR's March 1993 guidelines: Sediment Control Plans For Wet Crossings, General Conditions TransCanada PipeLines, and as amended from time to time in consultation with TransCanada.

- (f) at least 48 hours prior to an environmental seminar for on-site supervisory construction personnel, TransCanada shall notify the Ministry of Environment and Energy ("MOEE") District Manager or designate, the local OMNR District Manager or designate and the chair of the OPCC of the date, time and place of the environmental seminar and provide the names of the Construction Supervisor and Field Environmental Inspector.
- (g) TransCanada shall provide notice to the local OMNR District Manager or designate at least 48 hours prior to construction at each water crossing and notice within five days of completion of construction at each water crossing. Notices are to be provided during normal office hours. The OMNR District Manager or designate will be advised by TransCanada at the earliest possible time of any timing changes after notice has been given.
- (h) TransCanada shall provide the MOEE District Manager or designate with a construction schedule. Where water crossings are to be constructed in advance of the schedule, TransCanada shall advise the MOEE District Manager or designate, of the water crossing a minimum of 48 hours in advance.
- (i)
 - (i) TransCanada shall obtain the appropriate authorization under the Fisheries Act from the Department of Fisheries and Oceans ("DFO") prior to construction, should OMNR and/or DFO be of the opinion that such authorization is required as a result of intended actions of TransCanada.
 - (ii) TransCanada shall advise the OMNR District Manager or designate as early as possible of any undertakings or actions that may be expected to require DFO authorization such as proposed wet crossings which may effect critical fish spawning/incubation.
- (j) TransCanada shall notify the OMNR if restrictions placed on the timing of site preparation or construction activities will occur outside fisheries windows. TransCanada shall consult with OMNR to develop mutually acceptable mitigation plans. TransCanada shall comply with any OMNR restrictions placed on the timing of site preparation or construction activities with respect to fire protection.
- (k) the TransCanada Construction Supervisor or designate, shall immediately notify the local OMNR District Manager or designate, of the introduction of a significant amount of sediment or other materials into a waterbody or watercourse or failure of any mitigation measures and any measures undertaken as a result of these situations. Where possible these and subsequent measures shall be determined by the TransCanada Construction Supervisor or designate in consultation with the OMNR District Manager or designate.

- (l) TransCanada shall provide directly to the local OMNR District Manager or designate, for information purposes, a copy of any applicable Post-Construction and As-Built reports.
- (m) construction debris, excluding tree stumps and rip rap, must be disposed of at approved landfill sites.
- (n) all water wells within 100 m of proposed blasting locations shall be monitored by TransCanada for quality and quantity.
- (o) TransCanada will advise the local MOEE District Manager or designate of all complaints regarding adverse effects on water wells from blasting and the resolution of such complaints upon their resolution.
- (p) should construction interfere with any water supplies, TransCanada will provide to those parties that are affected, clear potable water of sufficient quantity or adequate filtration equipment to meet their current household requirements.
- (q) in areas of known or suspected contamination, TransCanada shall conduct soil tests and analysis for proposed excavation sites at water crossings.

Prior to Commencement of Construction

- 5. Unless the Board otherwise directs, TransCanada shall, at least five working days prior to the commencement of construction of any sensitive stream crossings, submit, for Board approval, additional information regarding these stream crossings. The additional information shall set out:
 - (a) construction designs of the crossing;
 - (b) in-stream timing restrictions;
 - (c) site-specific mitigative and restorative measures to be employed as a result of undertakings to regulatory agencies;
 - (d) evidence to demonstrate that all issues raised by regulatory agencies have been adequately addressed, including all necessary updates to the environmental assessments where deficiencies have been identified; and
 - (e) status of approvals, including environmental conditions.
- 6. Unless the Board otherwise directs, TransCanada shall, at least ten days prior to the commencement of construction of the approved facilities, file with the Board a detailed construction schedule or schedules identifying major construction activities and shall notify the Board of any modifications to the schedule or schedules as they occur.
- 7. Unless the Board otherwise directs, TransCanada shall, at least ten days prior to the commencement of construction of the approved facilities, file with the Board the results of the

heritage resource surveys referred to in the application, including any corresponding avoidance or mitigative measures.

8. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction, file with the Board copies of any provincial permits or authorizations which contain environmental conditions for the applied-for facilities. In addition, TransCanada shall maintain an information file(s) in the construction office(s) which would include any changes made in the field and permits obtained following the commencement of construction.
9. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction, file with the Board an update of the summary detailing the results of discussions with all appropriate special interest groups and regulatory agencies. In addition, TransCanada shall maintain an information file(s) in the construction office(s) which includes:
 - (a) a detailed listing of all site-specific mitigative measures to be employed as a result of undertakings to special interest groups or regulatory agencies; and
 - (b) an explanation of any constraints identified that may affect the construction program.
10. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction of the Savanne, Geraldton, Longlac, Flynn Lake, Cochrane, Latchford, and Marten River Loops:
 - (a) serve the heritage resource surveys on the Government of Ontario;
 - (b) seek the opinion of the Government of Ontario concerning the acceptability or non-acceptability of the heritage resource surveys; and
 - (c) advise the Board of the opinion of the Government of Ontario or of the Applicant's inability to obtain an oral or written opinion from the provincial government.
11. Unless the Board otherwise directs, TransCanada shall, at least fifteen days prior to the commencement of the hydrostatic testing portion of the project in Ontario, submit for Board approval additional information regarding standard conditions or specific mitigative measures that TransCanada intends to use for hydrostatic testing.
12. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction of any of the approved facilities, demonstrate to the Board's satisfaction that:
 - (a) in respect of new firm export volumes, all necessary United States and Canadian federal regulatory approvals, including applicable long-term Canadian export authorizations, have been granted; and
 - (b) in respect of the transportation services of new firm volumes on the TransCanada system:
 - (i) transportation contracts have been executed;

- (ii) all necessary United States and Canadian regulatory approvals have been granted in respect of any necessary downstream facilities or transportation services; and
- (iii) gas supply contracts have been executed.

13. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction of any of the approved facilities, submit for Board approval:

- (a) requirements tables in the same format as Tables 2, 3 and 5 of Sub-tab 1 under the Tab "Requirements" of Exhibit B-1-1 of the GH-3-96 proceeding, showing the base case requirements and those requirements for which Condition 12 has been satisfied; and
- (b) flow schematics of the TransCanada system demonstrating that those approved facilities which are to be released for construction are necessary to transport the requirements referred to in subsection (a).

During Construction

14. Unless the Board otherwise directs, TransCanada shall, during construction, ensure that specialized habitat for wildlife and plants with a designated status will be avoided, relocated or restored in consultation with appropriate regulatory agencies.

15. Unless the Board otherwise directs, TransCanada shall file with the Board, prior to seeding, any variations in the recommended seed mixes as outlined in the assessment reports, unless these changes are requested by the landowner.

16. Unless the Board otherwise directs, TransCanada shall, during construction, maintain for audit purposes at each construction site, a copy of the welding procedures and non-destructive testing procedures used on the project together with all supporting documentation.

Post Construction

17. Unless the Board otherwise directs, TransCanada shall, within six months of placing any of the approved facilities into service, file with the Board a report providing a breakdown of the costs incurred in the construction of the approved facilities, in the format used in Schedules 4 through 25 of Sub-tab 9 under Tab "Facilities" of Exhibit B-1-1 of the GH-3-96 proceeding, setting forth actual versus estimated costs, including reasons for significant differences from estimates.

18. Unless the Board otherwise directs, TransCanada shall file with the Board, a post-construction environmental report within six months of the date that each approved facility is placed in service. The post-construction environmental report shall set out the environmental issues that have arisen up to the date on which the report is filed and shall:

- (a) provide a description of all minor amendments to practices, procedures and recommendations which have been implemented during the construction process;

- (b) indicate the issues resolved and those unresolved; and
- (c) describe the measures TransCanada proposes to take in respect of the unresolved issues.

19. Unless the Board otherwise directs, TransCanada shall file with the Board, on or before the 31 December that follows each of the first two complete growing seasons following the filing of the post-construction environmental report referred to in Condition 18:

- (a) a list of the environmental issues indicated as unresolved in the report and any that have arisen since the report was filed; and
- (b) a description of the measures TransCanada proposes to take in respect of any unresolved environmental issues.

20. Unless the Board otherwise directs, TransCanada shall, within three months after the commencement of operation of the upgraded station facilities, file with the Board the results of the source NO_x emission testing, and indicate whether the compressor units are in compliance with the Canadian Council of Ministers of the Environment National Emission Guidelines for Stationary Combustion Turbines (December 1992, CCME-EPC/AITG-49E).

21. Unless the Board otherwise directs, TransCanada shall, within one year after the commencement of operation of the upgraded facilities at Station 75, file with the Board the results of the on-site ambient air quality monitoring program, including any recommendations for further mitigation.

22. Unless the Board otherwise directs, TransCanada shall, within three months after the commencement of operation of the upgraded station facilities, file with the Board, environmental noise assessment surveys indicating whether post construction noise levels resulting from all equipment operating at full power are in accordance with the noise levels as predicted within TransCanada's assessments.

23. Unless the Board otherwise directs, TransCanada shall within one year after the commissioning of new compression facilities proposed within the application, file with the Board a status report of any noise complaints received as a result of station operations, including the mitigative measures TransCanada would undertake to address those complaints.

Expiration of Certificate

24. Unless the Board otherwise directs prior to 31 December 1998, this certificate shall expire on 31 December 1998 unless the construction and installation with respect to each of the additional facilities has commenced by that date.

EXEMPTION ORDER CONDITION

1. Unless the Board otherwise directs, TransCanada, prior to the commencement of construction of any specific loop section referred to in this Order, except as provided in subsection (b), shall:
 - (a) demonstrate to the satisfaction of the Board that all required land rights have been obtained along the entire loop section; and
 - (b) in the event that all required land rights have not been acquired within a specific loop section referred to in this Order, any portion or portions thereof may be constructed provided that, prior to commencing construction on any portion or portions of the loop section, TransCanada shall demonstrate to the satisfaction of the Board that the rights, as prescribed in the Act, of the landowners along the portion or portions of the loop section for which TransCanada has not yet obtained the required land rights will not be prejudiced by the construction of the portion or portions of the loop section.

Appendix III

Richmond Loop

ORDER AO-2-GC-87

IN THE MATTER OF the *National Energy Board Act* ("the Act") and the regulations made thereunder; and

IN THE MATTER OF an application dated 3 October 1996, as amended, by TransCanada PipeLines Limited ("TransCanada") for exemption from Conditions 13 and 14 and an extension pursuant to Condition 24 of Certificate GC-87, filed with the Board under File No. 3200-T001-13.

B E F O R E the Board on 7 November 1996.

WHEREAS the National Energy Board ("the Board") issued to TransCanada Certificate of Public Convenience and Necessity No. GC-87 which was approved by Order in Council No. P.C. 1994-1846 dated 1 November 1994;

WHEREAS Condition 24 of Certificate GC-87 states that "Unless the Board otherwise directs prior to 31 December 1996, this certificate shall expire on 31 December 1996 unless the construction and installation with respect to each of the additional facilities has commenced by that date.";

WHEREAS TransCanada has filed an application dated 3 October 1996, as amended, in the GH-3-96 proceeding to exempt the facilities identified as the Richmond Loop (MLV 1216 to MLV 1216 + 10.3 km) from Conditions 13 and 14 of Certificate GC-87 and to extend Certificate GC-87 from 31 December 1996 to 31 October 1997;

WHEREAS the Board has determined that the potentially adverse environmental effects, including the social effects directly related to those environmental effects, which may be caused by the proposal are insignificant or mitigable with known technology;

AND WHEREAS the Board is of the view that it is in the public interest to exempt the Richmond Loop from Conditions 13 and 14 of Certificate GC-87 and to extend Certificate GC-87 to 31 October 1997;

IT IS ORDERED THAT the Richmond Loop is exempt from Conditions 13 and 14 of Certificate GC-87 in accordance with the GH-3-96 Reasons for Decision.

.../2

IT IS FURTHER ORDERED THAT Certificate GC-87 be extended to 31 October 1997 and that Condition 24 of Certificate GC-87 be hereby revoked and replaced by the following:

"24. Unless the Board otherwise directs prior to 31 October 1997, this certificate shall expire on 31 October 1997 unless the construction and installation with respect to each of the additional facilities has commenced by that date."

NATIONAL ENERGY BOARD

J.S. Richardson
Secretary

